

COAL AGE

The Weekly Journal of the Coal and Coke Industries

Volume 18

NEW YORK, THURSDAY, OCT. 21, 1920

Number 17

What Would Governmental Control of the Coal Industry Mean to the Public?

IN 1918 under strict Federal control approximately 8,600,000 tons, or 28 per cent, of the record output of 30,600,000 tons of coal in Indiana were shipped outside the state to consumers other than railroads. Under the Fuel and Food Control Act of that state now in effect any or all of this coal may be withheld from consumers in other states. To meet the emergencies of 1918 Indiana shipped 1,700,000 tons of coal to Michigan, over 600,000 tons of coal to Wisconsin, and more than 6,000,000 tons of coal to Illinois, mainly in the Chicago district, and today Indiana producers are assisting consumers in those states to meet their current requirements. Notwithstanding the evident needs of her neighbors, Indiana, a commonwealth of the United States, has said that until her citizens are fully supplied coal can be denied to all others.

What does this mean? Simply that if other coal-producing states take the same position and the Supreme Court upholds their right to do so, the 35 per cent of soft coal shipped outside the producing states for consumption will be subject to the beck and call of political intriguing commissions and supply in every state that does not produce sufficient for its own needs will be in jeopardy.

Who Is the Coal Industry?

WE ARE accustomed to say that the coal industry needs this, or did that, or is coming to something else. Who constitutes this entity we hear so much about? Industry is defined as the labor and capital engaged in a business. The coal industry, then, is all those who dig and handle coal and who finance the enterprises. Nationally there is one association representing the operators, another the jobbers, another the retailers, with a multitude of smaller subsidiary organizations, the exponents of particular groups with common interests.

It was the coal industry that came under government control during the war; it is the coal industry that today is facing a new brand of government regulation. Government regulation is impending because there has been cause given the public to seek protection both as regards supply and prices—a cause greatly magnified in many quarters for ulterior motives, but a cause of sufficient portent to spell disaster to the freedom of action of the coal industry unless counteracted.

Let us openly admit the facts. There is no unanimity of thought, desire or purpose in the coal industry today. Consider the published statements of the two national organizations representing the producers and the operators this past summer relative to the soft coal situation. On the one hand was George Cushing stat-

ing for the jobbers that there was no prospect and that there is no prospect of a coal shortage, and on the other hand Mr. Morrow throwing the strength of his organization into the gap to prevent a shortage. During the tenure of Dr. Garfield operators, jobbers, and retailers were constantly camped before his door, each charging the other with trying to obtain an advantage.

The magic wand of state or Federal control cannot touch just one branch of the industry; when it is laid on it whips all—producer, jobber, and retailer. It was so in 1917; it is so today. Witness the Indiana State law recently enacted and now functioning. Even before the constitutionality of this law can have been fully tested other states are considering like acts. The tendency is to nail the whole works up tight because the politicians and common garden variety of legislators know but one way to act and that is to pass a law taking control of the offending parties.

Recall the series of hearings presided over by Senator Frelinghuysen last year and the summer just past. The National Coal Association put up a clear-cut, convincing case before this tribunal for the bituminous-coal producers. The jobbers told their story, the retailers and anthracite producers presented still other facts and arguments in support of their actions.

When has one section failed to pass the buck to some other? Who do you suppose in the mind of *pro bono publico* is the coal industry? Is it not appropriate for all to pause and consider that the coal industry should have a policy and should meet the Government and the public on the same basis of fact?

Open-Top Priority Proves Worth

RENEWED assertions of the American Railroad Association, backed by statistical evidence, that the roads are now carrying as much freight as ever before in their history only serve to show the wisdom and necessity of the orders of the Interstate Commerce Commission discriminating in favor of coal in the use of open-top cars. Although the production of soft coal is nearly 52,000,000 tons ahead of last year, it is still more than 45,000,000 tons behind 1918 at the same date, notwithstanding the railroads are originating as much freight as in the previous record year of 1918. But one conclusion is warranted under the circumstances—coal has not had its share of transportation. Iron and steel, which were in great demand this past summer—a demand the greater because of foreign orders, added to local requirements—have shown a tendency to slump. There would be no drop in the steel market if buyers were as short of their needs as they are of coal. Higher class commodities than coal have obtained the transportation they required but coal will catch up with the procession by the end of the year, with the help of the open-top priority orders.

The "come-back" of the railroads under private management has been rapid. There is every reason to believe that they have come back to stay for good. As soon as our stocks of soft coal are ample for the winter, coal, like other commodities, will record a marked price recession. The performance of the railroads in the next six months will settle the matter one way or the other.

In this connection it is encouraging to read the statement of Alfred P. Thom, general counsel of the American Railway Executives, that:

"Aided by the new conception of the relationship of government to their own interests and responsibilities, the carriers are facing the future with courage and with confidence. Notwithstanding the difficulties, they are already performing with their impaired and inadequate facilities a better and larger transportation service than ever has been furnished under normal conditions to the American public. By voluntary action they are establishing the degree of co-operation with each other and of co-ordination of their facilities needed in the public interest and are manifesting a spirit, a purpose and an efficiency in keeping with the new trust which has been imposed upon them."

Get Under Cover Before the Storm Breaks

IT IS idle to pass lightly over the evident signs of danger threatening the political and economic freedom of the coal industry. The storm signals have been displayed and all have been warned that when Congress assembles in December the coal troubles of the nation will be aired in a way that will not help the industry. Senator Calder has accumulated a mass of data on the high prices of coal and a book of opinions of what should be done to the coal man. Senator Frelinghuysen may be expected to continue his hearings and he has become sufficiently familiar with the subject to make them interesting. The shortage of household anthracite, temporary though it may be, will inspire other investigations. On top of all this are the exposures of graft in New York in the distribution of coal, particularly with reference to the use of assigned-car priorities for public utilities.

Whereas many fair-minded men are willing to concede, with the judge in West Virginia, that in selling a product at the price offered in the open market, even though at what are exceedingly high figures, the seller is guilty of no crime if he has not participated in a conspiracy to artificially boost the prices, these same men are rightfully indignant over such evidences of graft as have been brought to light recently in the distribution of coal. In the long run coal men will injure themselves most by charging outrageous prices and are certainly inviting early trouble by permitting such practices as overshipping on permits and abusing every privilege given them by the Government.

The spread of the Indiana idea that coal can be controlled locally by State laws, futile as it is, is certain to result in a national feeling that better than that were a national control. This idea is certain to be proposed this winter and just at a time when our coal troubles will largely be over. New and important steps are being considered and are required to prepare the average men in the industry and the public as well for the clamor that is coming for national control. Reports are to the effect that the present administration at Washington is not in favor of such a step and we are convinced that the business interests of the country will

throw their influence against such a move, but the burden of the fight must be carried by the coal men—large and small—producer, jobber and retailer. The evils in coal distribution are being perpetrated by a small minority of those in the trade, and even though the public be convinced of this fact, it may demand some governmental action to curb that minority, in which the majority will of necessity be compelled to participate.

The most important thing for the rank and file is to follow closely the work of their organizations and give them not only the financial support that comes easier with the better profits of today, but actual co-operation in attending meetings and adhering to the program that is adopted.

Labor Supply and Production of Anthracite

ANTHRACITE production in 1919, as shown by the Geological Survey in what are practically final figures, was 78,502,000 gross tons, or a decrease of about 11 per cent compared with 1918 and below 1917, which holds high record, but in excess of 1912, 1915 and 1916 figures. The decrease was approximately ten million gross tons, of which six million tons was in freshly-mined coal and about four million tons in washery product. As pointed out by the Geological Survey, the percentage of decrease in washery product was far greater than in freshly-mined coal. The significance of this is that during the war the maximum production of anthracite was attained by a large increase in the production of culm bank coal, which yielded a comparatively small percentage of domestic sizes but a large quantity of steam coal, for which there was a strong market. In 1919 the market for steam sizes fell off and that for domestic sizes, after the first four months of the year, was strong.

Not all regions fared alike in the decrease in 1919, the Lehigh region recording a drop of less than one million tons of freshly-mined coal, the Schuylkill district a decrease of about two million tons and the Wyoming region a decrease of about 3,500,000 gross tons.

The number of men employed increased from 147,121 in 1918 to 154,686 in 1919, a figure slightly greater than the number of men employed in 1917 but lower than any year preceding since 1903. The maximum number of men employed in the production of anthracite, according to the Geological Survey, was in 1914, when there were 179,679 men in the region employed in the production of anthracite. The average number of days work in 1919 is reported as 266, compared to 293 in 1918 and 285 in 1917. This record of days worked in 1919 is exceeded only by 1917 and 1918 in the period from 1890, for which records are available.

The average output per man per day, generally considered an index of the efficiency of the men, was 2.14 net tons compared with 2.29 in 1918 and 2.27 in 1917, which indicates a decrease in the average efficiency of the men compared with the war years. The record, as reported in the Geological Survey, for 1916 was 2.16 and for 1913, the pre-war year of highest output, the figure was 2.02 net tons. The average output per man for the year was 568 net tons in 1919 compared with 672 net tons in 1918, the highest record attained. The decrease in average tonnage per man per year in 1919 was due, of course, to the lesser number of days worked and to the slightly smaller average output per man per day.

Paris Lights Up Again

Paris is making an attempt to look after dark like it did before the war. Enough German coal, it appears, has been stored in the city's yards to justify the attempt and the almost complete darkness in which the city has been wrapped at night since February last is now to be ended. This month, thanks to the increased output from French mines as well as to the delivery of coal by the Germans, stocks are nearly the normal of before the war and the card ration to householders has been increased to a quantity almost sufficient to keep every one warm throughout the winter. Still there is the prospect of an English coal strike, and as this is the third time the streets have been lighted up since the armistice, Parisians are not overoptimistic that it will last.

Unfilled U. S. Steel Orders Continue to Decline

Unfilled orders on the books of the United States Steel Corporation at the end of September stood at 10,374,804 tons, a decline of 430,234 tons compared with the bookings on Aug. 31. The loss of new business, although not as great as had been predicted in some quarters, was regarded as another indication of the current hesitancy of buyers generally. The 1920 peak of contracts was reached in July, when a total of 11,118,468 tons was reported. September bookings compared with 6,284,638 tons in the corresponding month a year ago. The high record of unfilled business was attained in April, 1917, when war orders helped to swell the total to 12,183,083 tons.

N. Y. Public Utilities Increase Coal Supplies

Supplies of coal in the bins of New York public utilities amounted on Oct. 5 to 427,339 tons, compared with 399,676 tons on the same day in the previous week. Commenting on the situation the Public Service Commission said: "While the report shows an increase it is not sufficient to assure the several utilities of an adequate supply to last them through the coming winter."

German Miners Ask Wage Increase

A conference at Bochum of unions composing the Miners' Federation, says the Berlin *Vorwaerts*, has telegraphed to the German Minister of Labor a demand for an immediate increase in wages.

Railroad Consolidation Plan Nearly Ready

Work is said to be progressing rapidly on the tentative plan of the Interstate Commerce Commission for consolidation of railroads into a limited number of systems, as re-

quired by the Transportation Act. Various railroads are working out merger proposals to submit to the commission, but no propositions for pooling the management and operation of railways under one corporation can be effected, officials said, until a complete plan has been framed by the commission.

Senator Wadsworth Praises the Esch-Cummins Act

Before an audience composed largely of railroad men at Hornell, N. Y., Senator Wadsworth called the Esch-Cummins railroad law one of the greatest achievements of

NEWS BRIEFS

Terse Items Chronicling Events of Interest to the Industry

the Republican Congress. He said the railroads practically were ruined when turned back to the owners after twenty-two months of Government operation and that the Transportation Act was carefully built up to protect both the public and the owners.

Unmoved Coal in Canada To Be Seized and Sold

To expedite coal movement on Canadian railways, the Dominion Board of Railway Commissioners on Oct. 9 issued an order empowering fuel administrators to seize contents of cars containing coal and coke unloaded eight days after arrival. The fuel is to be offered for sale to municipalities or dealers where it is seized.

What Is a Strike? Pennsylvania Industrial Board Asks

A representative committee of three employers and three employees, with officials of the State Department of Labor and Industry of Pennsylvania acting in an advisory capacity, has been asked by the State Industrial Board to settle the question of what constitutes a strike. The board received a report on definitions of other States, and the Attorney-General's opinion that the State Employment Bureau should determine when a strike is in progress and be guided by the ruling of the Industrial Board. The committee will be asked to meet in Pittsburgh Oct. 29.

Bureau of Mines Head to Retire

Dr. F. G. Cottrell, recently made chief of the U. S. Bureau of Mines to succeed Dr. Van H. Manning, is planning to retire from that post soon; probably around Dec. 1. H. Foster Bain, formerly with the Bureau and now with the Standard Oil Co. of India, is mentioned as a possible successor, and it is understood that cable communications on the subject have been sent to him. F. W. Denton, vice-president of the Copper Range Consolidated, also is mentioned as a possible selection for the place. It is understood that Dr. Cottrell will take up research work as a member of the National Research Council.

Coal Profiteer Prosecutor's Post Still Unfilled

The position of Assistant Attorney-General in charge of anti-trust cases and coal cases under the Lever Act, vacated by Judge C. B. Ames Aug. 31, remains unfilled. Frank C. Dailey, of Indianapolis, who was one of the prosecuting attorneys in the Newberry election fraud case, was offered the place, but declined.

C. A. Owen Heads Coal Exchange

Charles A. Owen was elected president of the Tidewater Coal Exchange of New York, Oct. 13, and J. W. Howe was elected secretary-treasurer and commissioner. The exchange was instituted by the Government as a war measure, and in the first eighteen months of its existence saved the expenditure of a large amount of money for new coal cars. Through the "pooling system" established in connection with the work of the exchange, the average saving now is .113c. on each ton coming into New York.

Stinnes Halts Nationalization of German Coal Mines

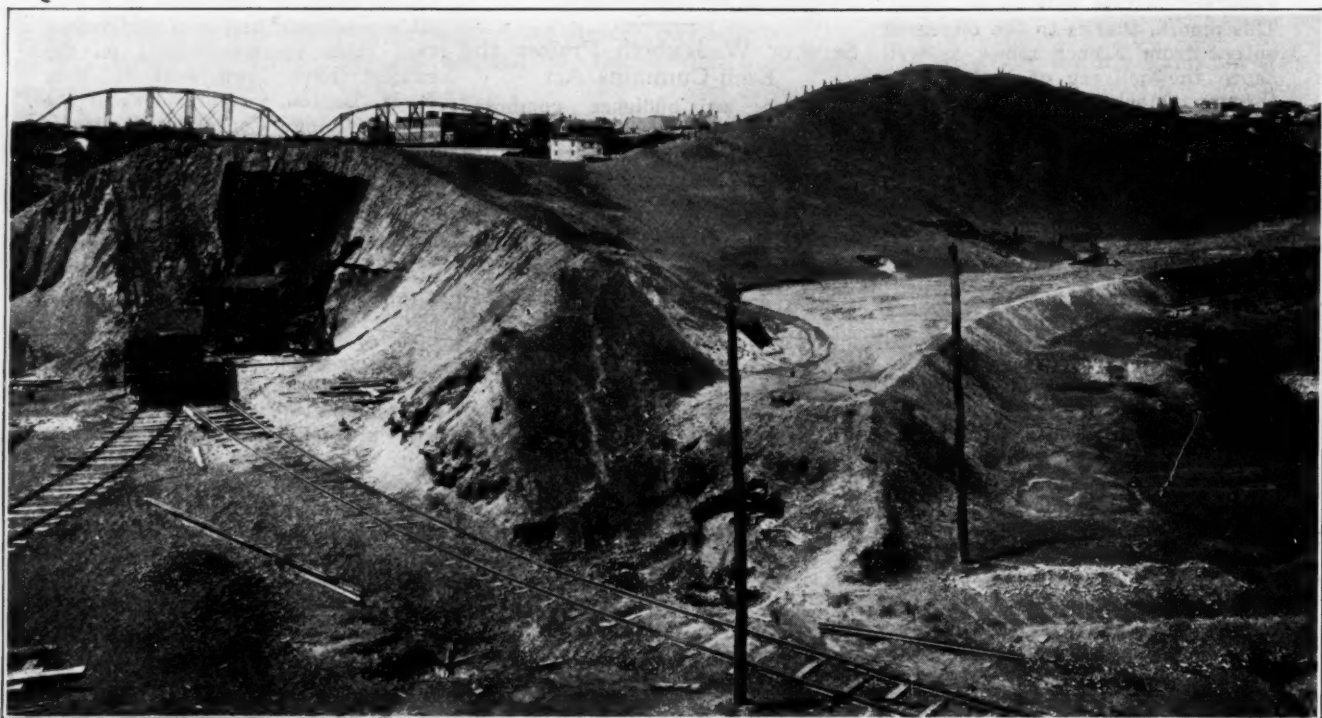
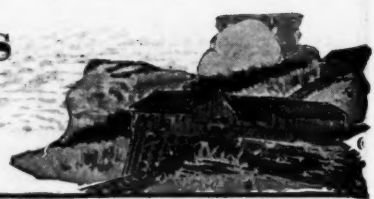
Nationalization of the German coal mines, as demanded by the Reichstag, has been halted, at least temporarily, in the Reichsrat by Hugo Stinnes, the German industrial king. Stinnes informed a committee of the Reichsrat that the nationalization of the mines would place Germany at the mercy of the Allies. He showed them a clause in the Treaty of Versailles which provides expressly that the Allies can seize Government property if Germany fails to comply with the reparation provisions.

Ohio's Coal Output Grows

In August, 1920, according to a recent report, the State of Ohio produced 4,124,000 tons of coal, an increase of 297,000 tons when compared with production in July. During the first eight months of the year the state produced 28,252,000 tons.



Through the Coal Fields With a Camera



Above and Below Ground in the Anthracite Field

Above—A steam shovel loading out a culm bank to railroad cars that transport it to the breaker for preparation. 1,200 ft. below the surface. Lime for disinfecting purposes in first stall.

By New Operating Methods Estimated Life Of Seneca Colliery Has Been Tripled

Many Difficulties, Such as Subterranean Outcrops in Glacial Drift, Mining Under River Beds, a Large Inflow of Water and One Bed Squeezed Over Practically the Entire Area, Have Been Encountered and Surmounted in Operating This Mine

BY DEVER C. ASHMEAD
Wilkes-Barre, Pa.

APPARENTLY it is the general opinion, frequently expressed or implied by operators of other fields, that mining in the Wyoming Valley is a much simpler proposition than in other parts of the anthracite region. It seems to be the general belief that conditions here encountered are comparable to those existing in the bituminous fields.

Frequent repetition of such assertions led me to make an investigation of conditions as they exist at the Seneca colliery of the Lehigh Valley Coal Co., at Pittston, Pa. While conditions here encountered may be more difficult than in some other mines throughout this field, there probably are many other operations that have similar or possibly worse problems to solve.

Mining was begun at this colliery about sixty years ago. Consequently one of the most important and most difficult problems faced by the operators of today is the conditions imposed by the old inefficient systems of mining that were in vogue when this operation was opened. From the long term of years that this mine has been worked it will be readily understood that first mining has been almost entirely completed and that practically all the coal now being produced comes from second mining or robbing.

Conditions in this colliery are such that much difficulty is encountered in obtaining sufficient territory where robbing may be safely done. To keep the mine operating requires continual scheming in order to procure these robbing areas, and the circumstances that enter into and influence final decisions are interesting in the extreme.

COAL AT SENECA COLLIERY BY NO MEANS FLAT

Apparently the general impression prevails that the coal measures in this section are approximately level and consequently resemble those of the bituminous region, and that as a result the mining methods followed are similar. While it is quite true that the methods pursued resemble those of the bituminous region, the belief that the measures lie flat is entirely erroneous, as may be readily seen from the typical cross-section, Fig. 1. While the generally flat character of the beds as differentiated from pitching measures is plainly visible, nevertheless there is a difference in elevation of over 200 ft. between the highest and the lowest points in the Marcy bed.

As a matter of fact, a topographic map of any of the coal measures here encountered would greatly resemble a similar map made in a country that has rolling hills about 200 ft. in height. It will be noted that at one point an S-fold in the coal occurs. One point worthy of careful consideration is the fact that contours of the different beds closely coincide; that is, anticline corresponds with anticline, flat with flat and swamp with swamp.

From the contours as drawn for any one bed of coal it is possible to lay out the workings in any other bed either above or below it. In fact, by changing the contour elevations it would be possible to substitute the map of any one bed for that of any other bed. This enables the engineers to lay out headings in such manner that there shall be the least possible adverse grade for the haulage.

RIVERS AND FLOODED FLATS SOURCE OF DANGER

It will be noted from the map shown in Fig. 2 as well as from that of Fig. 5 that a large portion of this property underlies the Susquehanna and Lackawanna rivers. This circumstance tends to complicate mining methods to an appreciable degree, for great care must be taken that none of the workings breaks through to the surface. Not only must care be exercised under the river itself but also under the river flats, which during certain seasons of the year may be under water to a depth of from 6 to 8 ft. The nature and extent of these flats may be seen in Figs. 7 and 8.

Another serious problem is introduced by the circumstance that the famous Buried Valley passes through this and adjoining properties owned by this and other companies. This valley in places has a depth of 200 ft. and the Pittston and Marcy beds outcrop in it. During the glacial period this depression was completely filled with drift, and it is therefore impossible to locate the line of outcrop of the coal in its bottom except by boring.

Surface support also presents a serious problem. A large portion of the country over this mine is built up and it is necessary to provide support for the buildings there erected. Furthermore, a large area is overlaid by a cemetery which must likewise be supported.

SQUEEZES AND MINE WATERS, OTHER PROBLEMS

The above, while apparently sufficient problems to satisfy the desire of any engineer, are only a portion of those here encountered. Two of the chief difficulties have not yet been mentioned. The first of these is the fact that the Red Ash bed practically throughout the entire property has been squeezed, and the second lies in the large amount of water that has to be handled.

Before taking up the manner in which these problems have been met it might be well to give some figures as to the life of the mine. R. V. Norris, mining engineer, has stated that there is more coal in the anthracite fields today than there was twenty years ago, although mining has been pursued continuously throughout this period.

The Seneca colliery is a good illustration of what Mr. Norris means by this statement. In 1912 an estimate of the amount of coal available in this mine was made. It was found that there were 1,975,000 tons

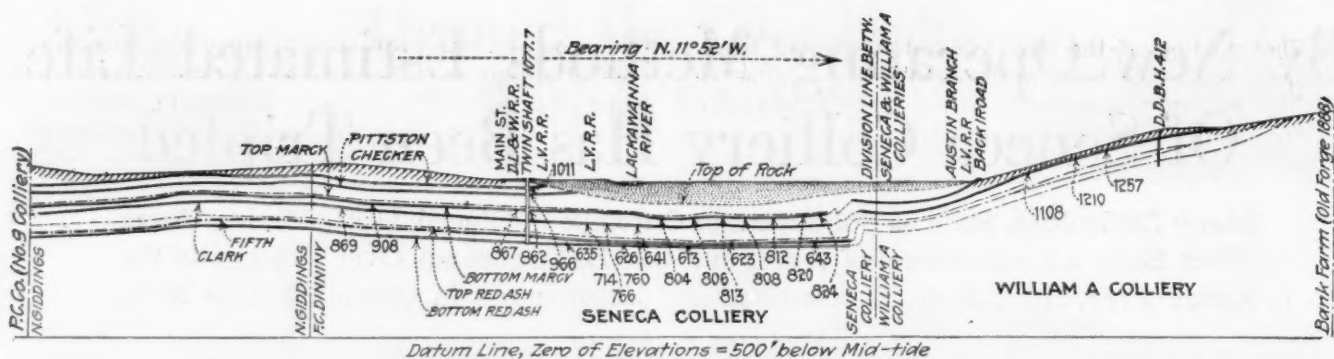


FIG. 1. CROSS-SECTION OF THE MEASURES AT SENECA AND WILLIAM A. COLLIERIES

It will be noted how gently the measures are folded throughout the Seneca mine. They rise somewhat steeply in the William A. operation to the north. The following beds occur: Pittston Checker, Top Marcy, Bottom Marcy, Clark, Fifth, Top and Bottom Red Ash.

of coal, which at the rate of mining then existing would last for about eight years. These eight years have now elapsed, and the mine is still operating.

Furthermore, the company is now remodelling its breaker at a considerable cost. An estimate was made in July of this year of the amount of minable coal yet in place. This was found to be 2,500,000 tons, or more by 500,000 tons than what was in sight in 1912. No more territory had been added during the interim. Thus not only is the mine yet in operation but during the eight-year period just passed there was produced 2,207,241 tons of coal, which exceeds by 232,241 tons the original estimate.

WILL LAST THREE TIMES ESTIMATED PERIOD

In other words, including what has been mined and what is now in sight, the original estimate has been exceeded by 2,732,241 tons. Besides this amount 1,020,000 tons is now available from adjoining mines which in 1912 were considered unworkable. There is thus in sight about fifteen years of mining on a property which, according to the previous estimate, should have been worked out this year.

None of this coal is new but is what only eight years ago was considered unworkable. It has been rendered available through the intelligence and ingenuity of the mining engineers of the Lehigh Valley Coal Co. The advance in the science of mining during the last eight years, alone, has made more coal available now than there was eight years ago, although the mine has been working at capacity throughout this entire period. This proves Mr. Norris' statement.

On June 28, 1896, one of the greatest disasters in the history of anthracite mining took place in this colliery. At that time fifty-eight men lost their lives in a squeeze that crushed the Red Ash bed. The bodies of these men have never yet been recovered. In 1904 a second squeeze occurred which completed the destruction of the Red Ash workings over the entire property with the exception of some small areas. The squeeze not only affected this property but adjoining ones have felt its effect at various times. To some extent it displaced all the measures to the surface. Investigations conducted by the owning company have shown that the Red Ash bed has squeezed down to a thickness of about 24 in. over practically the whole area.

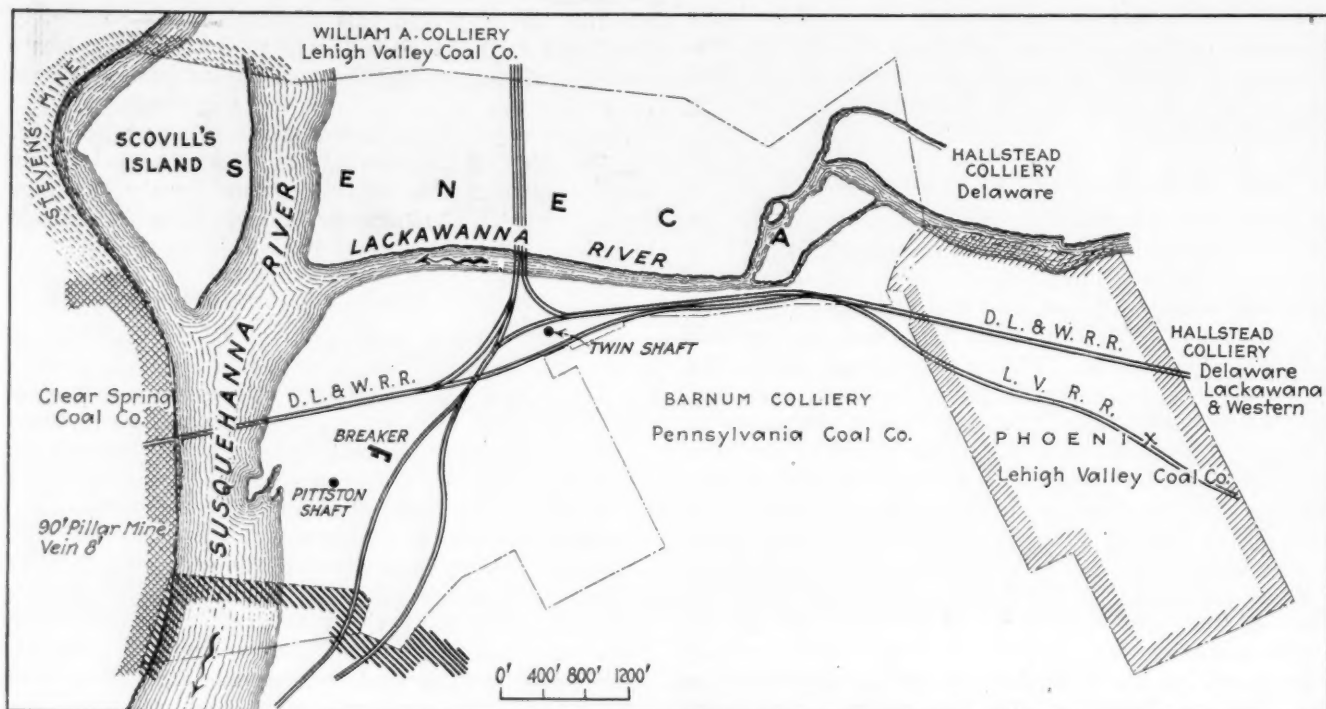


FIG. 2. SURFACE MAP, SHOWING LOCATION OF SENECA, STEVENS, CLEAR SPRING, BARNUM AND HALLSTEAD COLLIERIES

Some of these are worked out. Owing to the presence of the Susquehanna and Lackawanna Rivers and the extensive buried valley, the amount of water to be handled is immense. Of the coal mined three parts are shipped and one part is used under the boilers to clear the mine of water and to run the washer.

That portion of the Red Ash bed unaffected by the squeeze has since been worked out without difficulty. In this colliery this measure splits into two parts. The upper is known as the Fifth Vein and is separated by 6 to 12 ft. of intervening strata from the lower split. After the great squeeze, work was continued in this vein, and the first mining has been completed. Large reserve pillars have been left in this vein to support the upper workings.

Great difficulty was encountered in obtaining this coal, as the squeeze had broken the bottom rock, and when the coal bed was removed and the weight thrown on the pillars, the bottom heaved. It then became necessary to keep a large force of men cutting down the bottom in order to permit cars to enter the workings.

this property is of rather poor quality. This bed is really the only one in which any first mining is now being practiced. This measure is normally about 5½ ft. thick and lies approximately 250 ft. below the surface. On the Duryea end of the property, where the coal is of better quality, it has been practically worked out, but on the opposite end there still is a considerable amount of virgin coal.

No exceptional problems are encountered in this measure except those imposed by the thinness of the bed in certain parts of the mine. It might at first seem as if the major portion of the mine output would be produced from this measure. This is not the case, however, as this bed is quite irregular in thickness and pinches down rapidly so that it is not profitable to work,

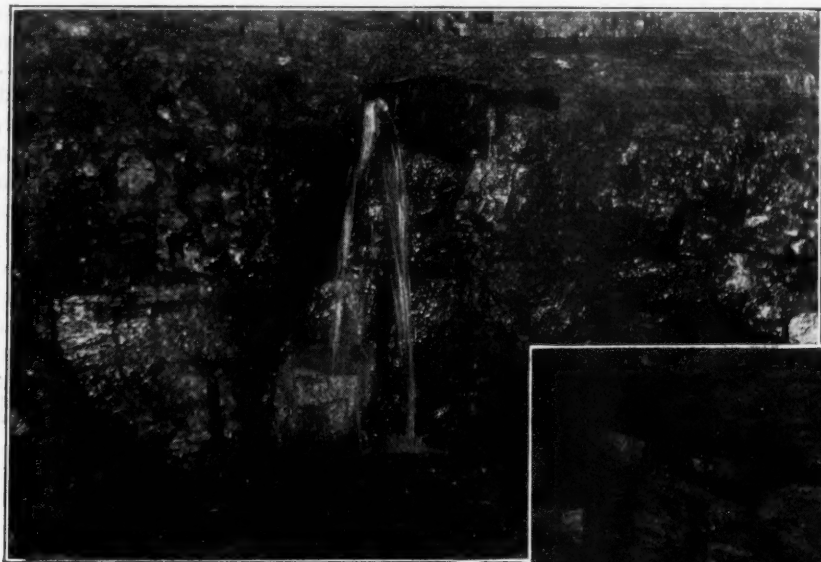


FIG. 4.

Spring Flowing from Coal

Here 100 gal. per min. is leaving the coal itself. Coal usually is resistant to the passage of water but at this point there has been a big squeeze and the coal is cracked, allowing the water to pass through. Both these springs occur in the Red Ash vein.

While working in this bed sinking a sump a miner's hat and some tools were discovered. These had evidently been left by the miners who were caught in the great squeeze. The finding of these indications of the buried men did not, however, warrant further search for their remains, as it would have been practically impossible to locate the bodies because the men were scattered over a large area.

HAVE COLUMNIZED THE PILLARS SUCCESSFULLY

Where the Fifth Vein is worked over that portion of the Red Ash unaffected by the squeeze, the pillars have been columnized. No difficulty was encountered in this operation, although only 6 ft. separates the workings. If the columnization had not been resorted to the pillars in the upper bed would have crushed through the floor into the lower measure and probably would have brought on a squeeze throughout this portion of the mine.

Above the Fifth Vein lies the Clark bed, which on

and a comparatively small portion of the mine product comes from the Clark Vein.

MARCY BED OUTCROPPED IN NOW BURIED VALLEY

The Marcy seam, which is the most important one on the property, presents many serious problems and has caused much trouble. This bed is not continuous over the entire mine area, although at no point does it outcrop on the surface. Its outcrop in the Buried Valley, however, becomes a source of difficulty, as the drift in this depression, as already has been stated, carries a considerable amount of water.

The bed itself is 4½ ft. thick with 1½ ft. of refuse. The old rooms were driven 24 ft. wide on 50 ft. centers, leaving 26 ft. pillars. The vein refuse and bottom rock furnished sufficient material to gob the chambers solid for a width of 12 ft. The pillars are then skipped for a width of 12 ft. and sufficient additional material obtained to fill the remaining 12 ft. of the chambers when the balance of the pillars can be removed.

FIG. 3.

Large Underground Spring

Two hundred gallons of water flow every minute from under the coal. The material supporting the bed is open and it allows the water to flow freely, but there seems to be no pressure behind it, the speed with which it travels preventing the forming of a head of water anywhere near the point of discharge.



Under the river and the river flats an interval of 13 ft. exists between the top and bottom Marcy, the top Marcy being too thin to mine here. The rock lying between the two splits is a sand slate that weathers rapidly and consequently readily breaks down. The caved rock acts as a support for the gob pillars, which are 24 ft. wide at this point, and props them solidly. This prevents the strata over the top Marcy from breaking. Iron pins, really old mine-car axles 4 ft. in length, have been placed on the surface upon which careful level readings are taken periodically. Thus far no subsidence has been observed. The only inflow of water that has been encountered was when the first pillar was removed. This influx amounted to 100 gal. per minute and has continued without interruption ever since. Eight and one-half acres under the river and the river flat are now being robbed in the manner above described.

Over a portion of this territory the top Marcy lies within 2½ ft. of the bottom Marcy. In this area, first mining operations were carried so far and such a high percentage of extraction was attained that robbing could not be executed without danger of bringing down the full territory. Wherever possible the Marcy is being robbed, but this can be done only where the top Marcy has not been mined. Where this upper split has been mined robbing would be apt to disturb the overlying rock, which is full of water fissures. Furthermore, if the Pittston bed were disturbed by the robbing of the Marcy, the water would be apt to pass from this measure into the lower vein.

Work in the Pittston bed is extremely interesting, as practically all the workings are under the river and a large portion of this measure outcrops in the Buried Valley. Practically all of the boreholes put down to test this measure are on 100-ft. centers. The minimum rock cover allowed is 35 ft. Approximately 48 per cent of the coal is removed from this bed. The rooms are driven 15 ft. wide on 45 ft. centers, leaving a pillar 30 ft. thick. With the crosscuts the amount of coal removed more nearly approximates 48 per cent than the 33 per cent indicated by the above figures.

One of the most interesting sights I have ever seen in a coal mine may be found in this measure. At the point marked X in the chamber marked 1 in Fig. 5 a stream of water averaging 400 gal. per minute flows out from the rib. This stream may change from side to side of the chamber as the work progresses, or from room to room. The water comes from under the coal through a soft shale. Although the workings are here 140 ft. below the river, there seems to be little pressure behind the water. At the point marked X in the heading 2 an inflow of water amounting to over 100 gal. per minute comes from the coal itself and falls to the floor in a cataract. In the places marked 3 and 4 also the water gushes from the walls of the headings.

Why the water flows from the coal in one place and from the bottom rock in another may be readily explained. Where the water issues from the coal the measures have been affected by the squeeze and the coal has been cracked and split, permitting the water to flow through this channel and saving it from the necessity

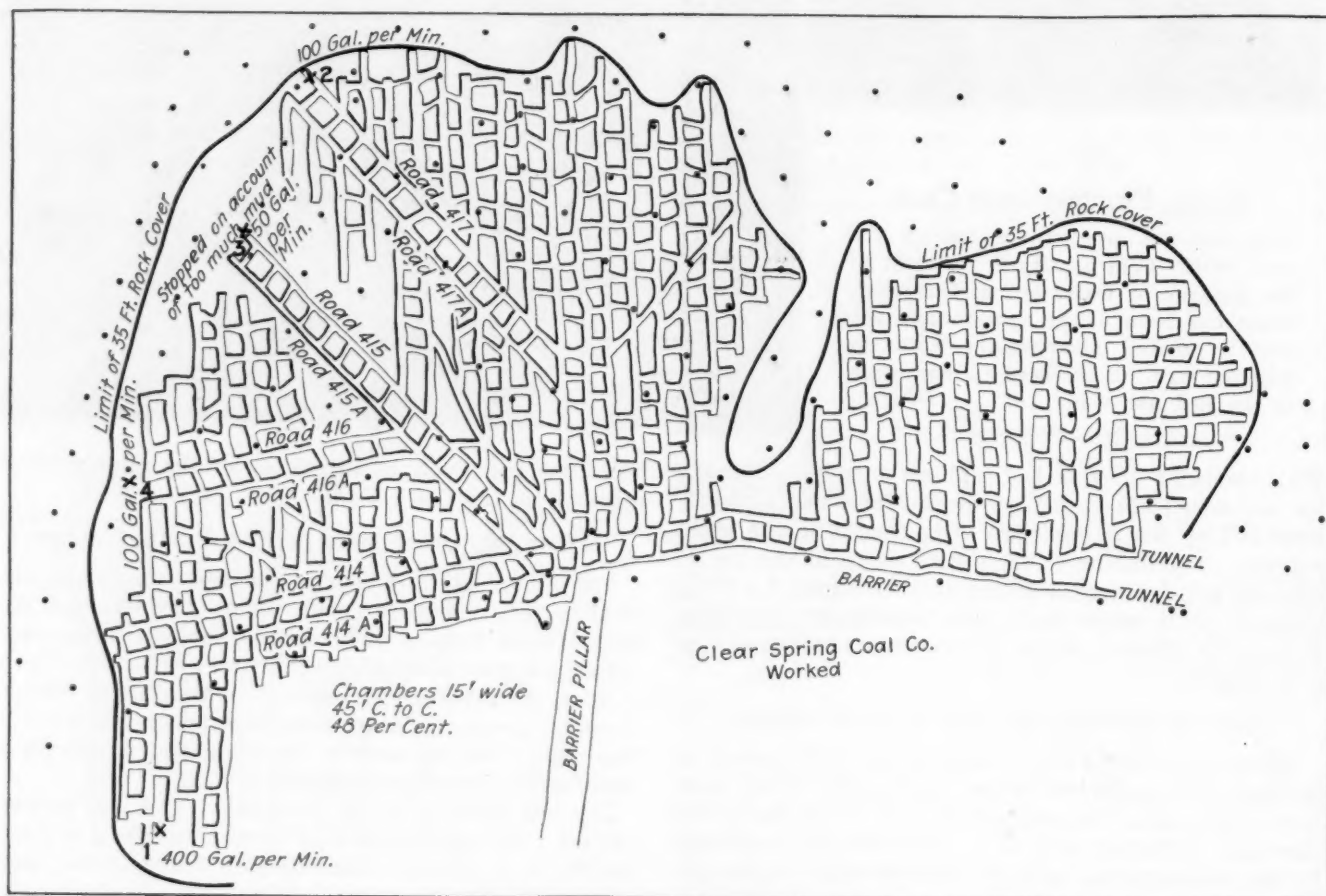


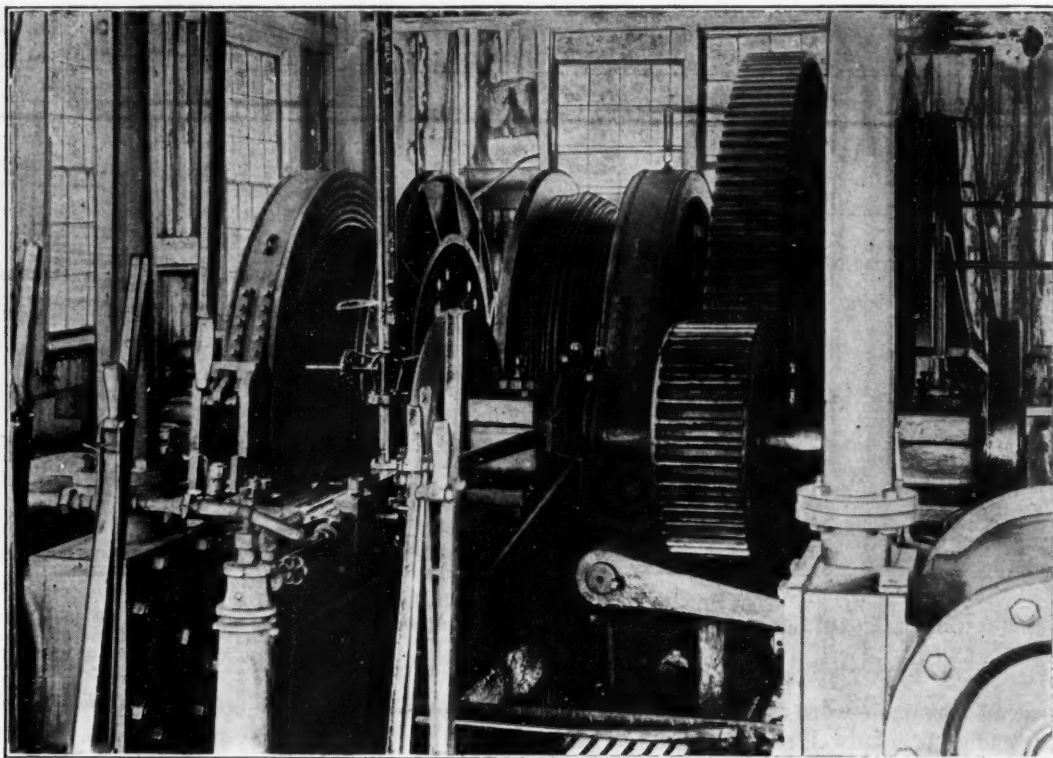
FIG. 5. WORKINGS IN THE RED ASH VEIN AT SENECA COLLIERY

Care has been taken to drill most thoroughly the whole area being worked so as to forecast the conditions to be met. The annotations marked 1, 2, 3 and 4 show the main points where water enters the mine. By keeping under sufficient rock cover it is possible to avoid the entry of such a volume of water as would make operation too expensive to be profitable.

FIG. 6.

Hoisting Engine at Seneca Colliery

An old back-gearred double-conical drum, steam-driven hoist. Although it has been in use many years it is still on the job and performing its daily work with satisfaction.



of forcing its way through the bottom rock. Where, however, the water comes from the bottom rock, the measures are undisturbed. By reference to Fig. 5 it will be noted that the anticlines in the Pittston bed reduce the rock cover and consequently decrease the amount of workable coal available.

Another problem that must be taken into consideration is the fact that some of the leases under which the company operates permit the removal of only two-thirds of the coal, the remaining third being left to support the surface.

WILL MINE LONGWALL, USING DRAG SCRAPERS

In a small area of virgin coal in the Red Ash bed the company is planning to mine by a modified longwall method. The plan is to drive two parallel headings at a distance of 300 ft. and a third at a similar interval. The latter heading will then be connected to the first. The coal will be mined along this 300-ft. face, a dragline scraper being used to transfer the coal to the haulage road. This is said to be the first mine to use the scraper system for handling coal in thin beds, the idea having originated here.

Before leaving the subject of mining problems it might be well to mention that in the Fifth and Red Ash beds much gas is encountered. No gas is generated in the Fifth bed, but because of the disturbance caused by the great squeeze the strata between these two measures are cracked and broken, and gas from the Red Ash bed finds its way into the workings of the Fifth Vein.

HOISTS NECESSARY, AS BED IS IRREGULAR

Because of the unevenness of the coal measures the haulage problem is a serious one. Although the daily output averages less than 1,000 tons, ten electric locomotives are required. One of these is a 13-ton machine, one a ten-ton, three are of eight tons and five are seven and one-half tons in weight. Besides these haulage motors a large number of hoisting engines are employed. Slope No. 15 requires two engines in addition to one

that operates on this slope and on slopes Nos. 9 and 11.

Slope No. 15 passes over three anticlines and a hoisting engine is required for each. Slope No. 6 has a hoisting engine that also operates on slope No. 16. There is another hoisting engine on slope No. 5. Besides these engines the Pittston shaft has a combination hoisting and tail-rope engine, shown in Fig. 6. This machine is particularly interesting because it is so arranged that it may be used for hoisting coal from the shaft or by the throwing-out of a clutch on the hoisting drum, and by the throwing-in of another clutch on the other drum it may be used to operate the haulage system, which is of the main- and tail-rope type. Not only is mechanical haulage used but a number of mules are required to assist in the gathering of the coal.

FOUR PUMPING PLANTS IN THIS ONE MINE

Four separate pumping plants are installed in this mine to hoist water to the surface. One pumproom is located in the Marcy bed and contains three Jeansville pumps. Another installation, also in the Marcy bed but near the Twin shaft, contains one Goyne and one Clark pump. The Fifth Vein has one Jeansville pump installed in it, while two pumps are located at the Pittston shaft. One of these is a Cox-Knowles and the other a Knowles. All of these pumps, with one exception, are duplex and all are operated under a steam pressure of 120 lb., except those at the Pittston shaft, where 85 lb. of steam pressure is employed.

Water from the pumps in the Marcy bed and Fifth Vein is sent to the surface through boreholes. These boreholes reach the surface in the river flats and it has been found necessary to build large concrete piers for the protection of the column pipes. These piers are 20 ft. high with the column pipe rising through the center. It was necessary to resort to this construction so that the outlet of the pipe might be of such a height above the river that when the stream rose the water would not enter the mine through these pipes. Fig. 7 shows three column pipes from the pumps in the Marcy bed. All three at the time the photograph was taken from which the illus-

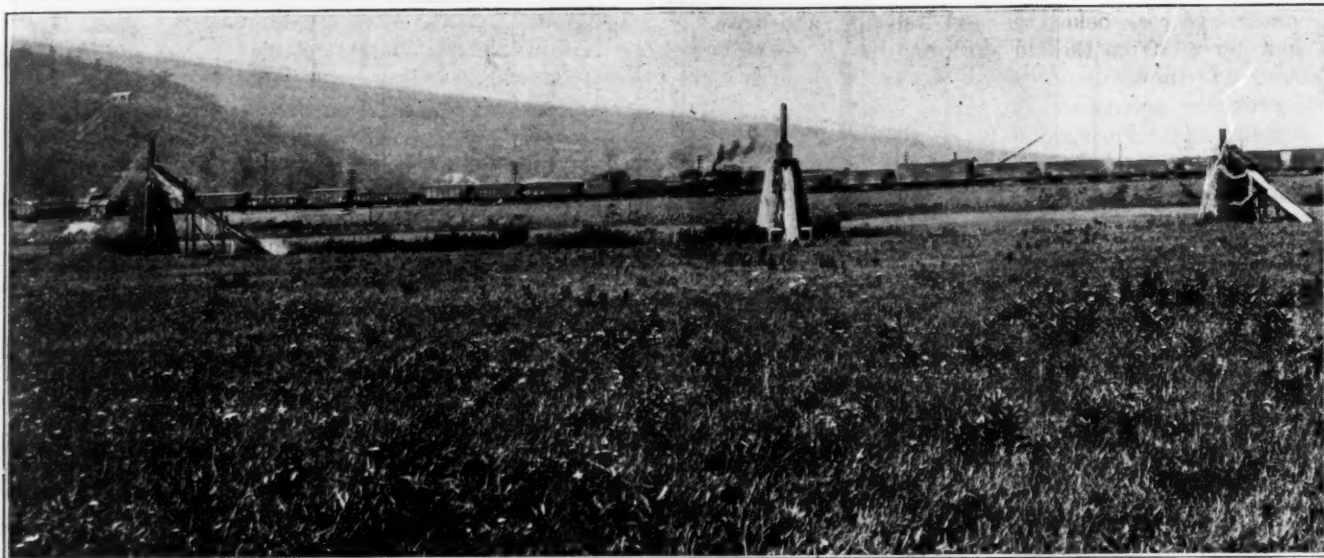


FIG. 7. TOWERS BY WHICH WATER IS DISCHARGED FROM THE SENECA COLLIERY
Water has to be pumped above the surface because in flood times the water is 6 or 8 ft. deep over the area occupied by the river flats. The standpipes carry the water from the Marcy Bed and the concrete towers, or piers, protect the pipes against the destructive action of floating ice.

tration was made were discharging water. Fig. 8 shows the same piers as well as the stream of water being discharged from the pumps. This stream carries 4,200 gal. per minute.

One interesting detail of the pumping problem in this mine is the fact that little margin exists between the maximum capacity of the pumps and the actual rate of pumping. All of the pumps except one operate for twenty-four hours a day. At times of high water, because of a rise in the river or heavy rainfall, when the influx of water into the mine is greater than the pumping capacity, the surplus is caught and retained in large sumps provided for this purpose.

At one time last spring the water stood 7 ft. above the pumproom floor in the Marcy bed. The pumps themselves, however, were dry because a dam had been constructed around them. In addition to the big pumps that discharge to the surface a number of smaller gath-



FIG. 8. THE PUMP DISCHARGE TOWERS

These are 20 ft. high so that by no possibility could they be points by which water could enter the mine should the pumps not be working at the time. A stream of 4,200 gal. per min. is running away from the three column pipes and forming the stream that flows tumultuously in the foreground.

erers are scattered throughout the workings. Thus there is one pump in No. 15 slope, two at slope No. 16, one in the Red Ash bed and one in the Fifth Vein; also two in the Duryea side of the Clark bed.

A QUARTER OF COAL MINED IS USED FOR POWER

The pumps in the Marcy bed operate against a head of 258 ft.; those at the Twin shaft against a head of 228 ft. The Fifth Vein pump lifts the water 425 ft., while the Pittston bed pumps have a head of only 140 ft. to contend with.

It has been possible to secure some extremely interesting figures as to the quantity of water handled at this mine, and the cost of handling it. An average of 10,944,000 gal. is pumped each 24 hours, or 3,094,560,000 gal. (equal to 14,845,841 long tons) of water per year. These figures cover the year 1919. The coal output for the same period amounted to a total of 223,446 tons of coal mined and 167,999 tons shipped.

The difference between the amount mined and that shipped was the quantity of fuel used to produce steam for the operation of the preparation machinery and the pumps. The amount of coal consumed under the boilers alone thus amounted to 25 per cent of the output, or 33 per cent of the coal shipped.

LIFTED 90 TONS OF WATER PER TON SHIPPED

By dividing the number of tons of water pumped by tons of coal produced it will be seen that 66.4 tons of water were pumped for every ton of coal mined, while for each ton shipped 88.3 tons of water was removed from the mine. It is believed that this is a world's record. The cost of pumping this water was enormous. When compared to the amount of coal mined it amounted to 70.8c. per ton, or to 94c. per ton of coal shipped. Each 1,000 gal. of water pumped cost 3.95c. These figures do not include interest on capital investment, overhead expense, depreciation, obsolescence or amortization.

As has been previously mentioned, 1,020,000 tons of new coal will be brought out through the workings of this operation. Most of this will come from the old Phoenix and Stevens mines. In order to render this coal available it will be necessary to unwater these operations. This will be done by constructing a new pump-

room in the rock below the Red Ash bed, and drawing the water off from the old workings by means of boreholes. This new pumproom will contain two pumps, one of 3,000 gal. and the other of 1,500 gal. per minute capacity. Both machines will be driven electrically.

From the preceding description it readily may be seen that the coal measures in this section of the anthracite field may be rightly considered as being flat. The mining is in a measure comparable to that employed in the bituminous field, but it is extremely doubtful if any bituminous-coal mine could be operated at a profit under the conditions here outlined.

Although this mine has already passed its allotted life by mining 232,241 more tons than it was estimated to contain eight years ago, and although later estimation of its life is fifteen years more, it is not safe to say that it will be worked out by the expiration of that period. For by the adoption of new mining methods and by possible changes in existing leases, instead of a fifteen-year existence, as is now estimated for this operation, its natural life may be extended to thirty years or more.

In other words, no anthracite mine is worked out until the last pound of coal has been removed.

A Few of the Less Emphasized Causes Why Fine Sizes Ignite Soft-Coal Piles*

One Ton of Coal in the Solid Exposes 47 Sq. Ft. of Surface to the Air—Crushed So as to Pass a Sixteen-Mesh Sieve It Exposes About One Acre of Surface—The Extent and Freshness of the Surface Exposed and the Rapidity of Ventilation Are the Chief Factors Governing Spontaneous Heating

BY O. P. HOOD†
Washington, D. C.

THE best current practice in coal storage is well set forth in a publication issued by the Engineering Experiment Station of the University of Illinois and written by H. H. Stoek under the title, "The Storage of Bituminous Coal." A short résumé of the subject is given by the same author in Bureau of Mines Technical Paper 235.

On spontaneous combustion rests the whole problem of coal storage. It is useless to store coal if it is to be lost by fire from spontaneous ignition. I shall therefore consider only this small portion of the general subject. Every engineer is familiar with the phenomena of self-heating of coal. For all that, this phenomenon is a relatively rare one. If we were to carefully count the number of times in a year that small quantities of coal are stored where for a few weeks they are undisturbed, the figure we would obtain would mount into millions. Of these, a relatively small number show the phenomena of spontaneous combustion. Hence the risk per ton is small. Heating rarely occurs in coal piles of only a few tons. Anthracite never ignites spontaneously and rarely does the domestic consumer of bituminous coal experience trouble from the heating of his fuel. The main interest in the subject lies in the large piles kept in reserve by public-service utilities or set on one side for industrial purposes.

CAN'T EXPLAIN PHENOMENON IN FEW WORDS

The public is desirous of receiving simple directions that will enable it to store with complete assurance against loss. Unfortunately, the matter is too complicated for a simple solution. Many of the factors involved are difficult to determine, as no practical means exist for quantitative measurement. The factors involve chemistry, physics and engineering, and the man who

is in close contact with the problem of stored coal is not always a good observer in these several lines. The result is many incorrect theories, opinions and prejudices. It will be my attempt to set forth some of the main factors in the problem so that a working theory may be obtained and observation centered on the essential factors.

I remember reviewing a case involving spontaneous combustion on shipboard where in the hearings everything had been investigated, from the pennant on the mast to the barnacles on the rudder, but the observations that had a real bearing on the heating of the coal were extremely few and formed a notably unpretentious part of a formidable-looking document. It is necessary to know what to look for in order to draw reasonably accurate conclusions.

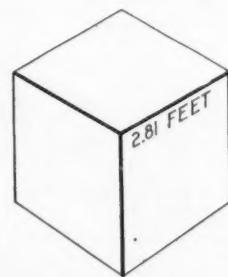


FIG. 1.
CUBE OF COAL
Weights one ton; occupies 22.19 cu.ft., and has a surface area of 47.38 sq.ft.

The heating of coal is a surface phenomenon. If a ton of bituminous coal could be delivered in a single cube (Fig. 1), each dimension would be about 2.8 ft. If the coal heats, it is due to something that goes on with respect to the surface and not something that occurs

within it. So far as we know, this is true no matter how small the piece may be. We are, therefore, interested in the amount of exposed surface in a ton of coal.

If this cube, having originally about 47 sq.ft. of exposed area, be continuously subdivided, the rate of increase in the exposed surface is shown in Fig. 2. If the size of each particle is reduced until it will pass a 16-mesh screen, the ton of coal will have an acre of exposed surface. It is obvious from this why it is that trouble from spontaneous combustion originates in fine coal, because the great increase in extent of surface

*Abstract of address entitled "Coal Storage;" read before the Pennsylvania Electric Association during its meeting at Bedford Springs, Pa., Sept. 10, 1920.

†Chief mechanical engineer, U. S. Bureau of Mines.

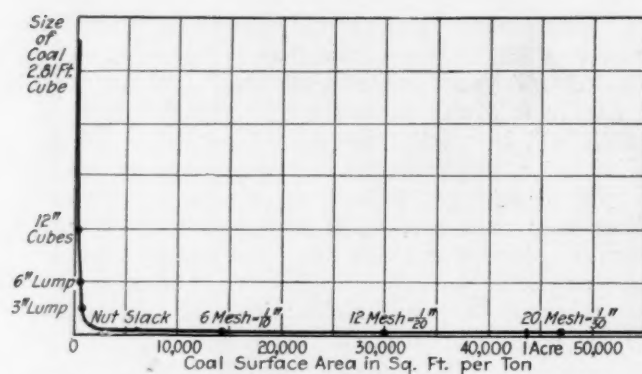


FIG. 2. SURFACE AREA EXPOSED BY A TON OF COAL WHEN DIVIDED INTO DIFFERENT SIZES

Note the interesting fact that until the size falls below 1½ in. nut there is no large amount of surface area. After that the area exposed to the air increases with great rapidity.

does not begin until we get below 1½-in. nut. If fine coal is kept out of the pile the heating surface is so relatively small that no cause exists for spontaneous combustion. But the consumer must remember that by buying lump coal he does not remove the possibility of heating, for the essential factor is how much fine coal actually gets into the storage pile. Coal bought as lump at the mine and handled with customary disregard for breakage may be far from its original condition when in the pile.

A unit of area of this coal surface generates a certain amount of heat, provided it can find combining material. The amount of heat generated depends upon the temperature of the piece of coal. That is to say, coal put into storage at a temperature of 80 deg. will generate much more heat per unit of surface than if put into storage at 60 deg. I cannot say just how much more, but the chemists tell us that in general the rate at which chemical reactions proceed doubles for every

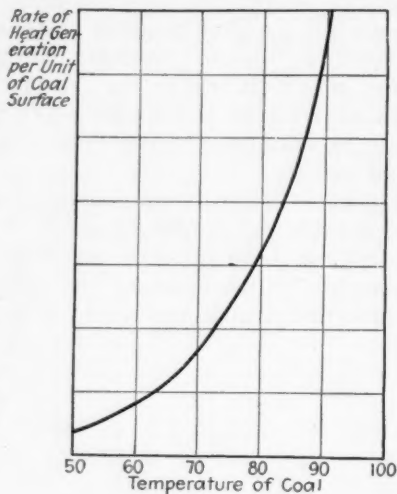


FIG. 3. HOW HEAT IS GENERATED BY HEATED COAL

In general, chemical reactions double in activity for every 10 deg. of rise in temperature. In consequence, coal may be more safely stored in cold weather than in hot.

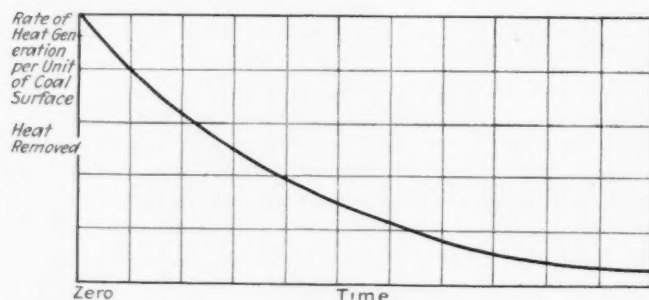


FIG. 4. GIVEN AN EVEN TEMPERATURE, CHEMICAL ACTIVITY WILL DECLINE

Freshly mined coal heats more than any other. Time reduces its chemical activity quite markedly. When newly crushed it is in its most fiery condition.

10-deg. rise in temperature. If this general statement applies in this case, an increase of 20 deg. in temperature means a fourfold increase in the amount of heat generated. It has already been a matter of observation that coal stored during the hot months of summer and in heated areas is much more liable to spontaneous combustion than that stored in colder climes and in cooler seasons of the year.

Another highly important factor is the freshness of the surface exposed. A freshly-broken surface of coal has a rate of heat generation that is a function of the kind of coal. That rate is practically zero with anthracite and is most rapid with the younger coals. The quantity of oxygen contained in the coal seems to be the fairest measure of this rate, although this is by

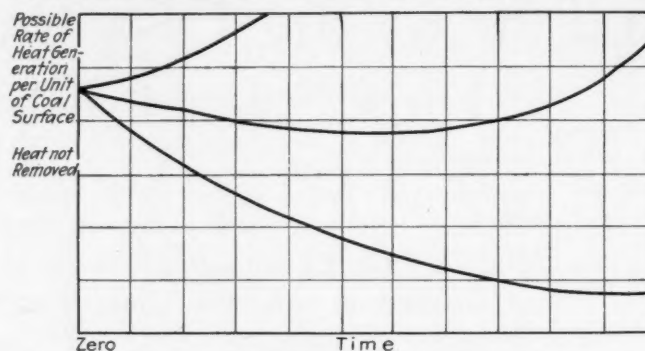


FIG. 5. IF THE TEMPERATURE IS RETAINED THE GENERATION OF HEAT MAY INCREASE INSTEAD OF DECREASE

When the heat cannot escape, the rise in temperature more than makes up for the aging of the coal surfaces. Thus the coal, which would be more inert with the progress of time only, becomes more disposed to catch fire. Three markedly different coals are shown here. One, apparently, despite all the increases in heat which are created in course of time, nevertheless becomes progressively less disposed to spontaneous combustion.

no means a reliable criterion. The high-oxygen coals of the Middle West and the sub-bituminous coals and lignites of the West show increasingly active rates of heating.

SPECIAL OBJECTION TO NEWLY-CRUSHED COAL

The coal surface apparently becomes satisfied in time and the heat produced falls to practically zero. The rate of heating then follows along a curve somewhat like that of Fig. 4. This means that for the first few days or weeks a freshly-broken surface is much more active than after a few weeks or months. This fact must be borne in mind when the question is considered as to whether it is wise to crush coal immediately before putting it in storage. Fires rarely occur after surfaces have been exposed for three months.

Since the rate of heating increases with the temperature, it is evident that if the heat generated is not removed, the process becomes a self-aggravating one, in which case the rate at which heat is generated, instead of falling as shown in Fig. 4, may rise with time, following one of the curves shown in Fig. 5. If the temperature of the pile reaches 140 to 150 deg. F. and continues to rise, it is probable that within a few days or a few weeks a destructive temperature will be reached, and the coal must be moved. Immediately the question how to get rid of the heat is presented.

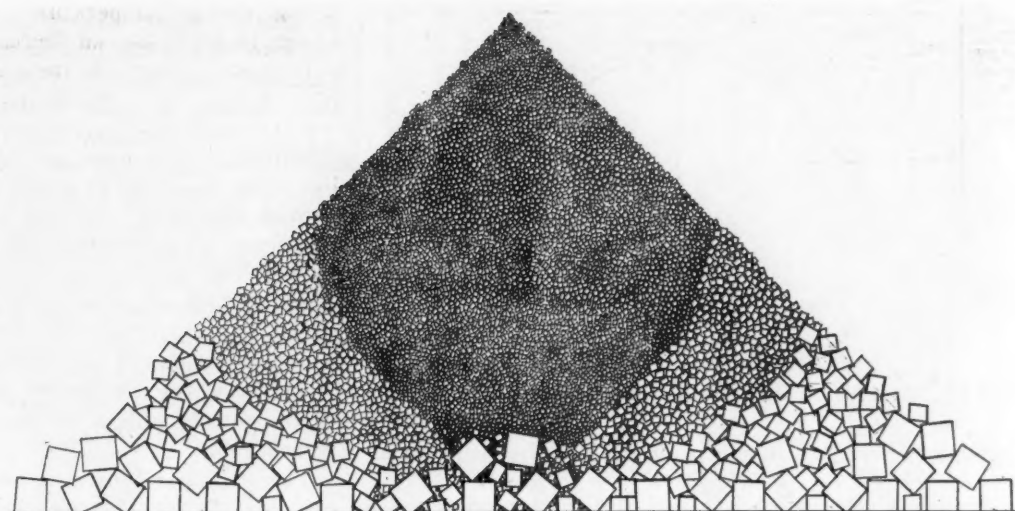
AIR CHANGED TWENTY TIMES DURING VOYAGE

A coal pile is cooled by radiation and by movement of air through the pile. Air moves rather freely through stored coal. In a certain case a partial cargo of coal was loaded into a bottom at New York and proceeded

FIG. 6.

Coal as Dumped in Pile

The big pieces continually roll to the bottom of the pile and leave the slack on top. Hence there is a separation according to sizes. The air cannot get to the center of the pile, and that portion does not fire. It plays, however, freely around the foot of the pile and cools it off, and as a result that portion of the pile does not ignite. Between those two areas are the danger points.



under sail to Norfolk. The general temperature of the pile at loading was known and on arrival at Norfolk the coal had so increased in temperature as to make it dangerous to add further cargo. Knowing the rise in temperature of this mass, it was possible to calculate roughly the exchange of air that must have taken place within the coal pile in order to supply the amount of oxygen represented by the heating effect.

This showed that all the air in the interstices between the pieces of coal must have been changed probably from twenty to thirty times during the time of heating. This coal was, of course, protected from winds, and this calculation shows the amount of the natural ventilation within a coal pile due to differences in temperature and the daily variation of barometric pressure. In many cases this natural change or breathing of air is enough to carry away the heat generated.

Suppose that coal was delivered in four uniform sizes and piles in a conical form by dropping it from a single point. The natural arrangement of particles would be such as to furnish a foundation, over nearly the whole pile, of larger sized pieces, while the lower flanks of the pile would likewise be of the larger sizes. Nearly all the smallest pieces would be in the central core of the pile. If one were to draw lines bounding the regions of these several sizes they would be something like those shown in Fig. 6.

In the region of large pieces air would move freely and the coal surface exposed would be a minimum; hence there would be little likelihood of heating. In the center of the pile the movement of air would be small, while

the amount of heating surface would be great. If the fine coal is so densely packed as to prevent a movement of air, there will be no heating because there will be no supply of oxygen to combine with the active surfaces.

Somewhere between these two extremes, the central core of fine coal and the large-piece region, there may be areas where the ventilating current is just sufficient to supply oxygen for a maximum rise in temperature and insufficient to remove the heat as it is generated. In Fig. 7 lines have been drawn showing in general progressively difficult paths for the movement of cooling air.

Some observers have stated that, in general, fires in large coal piles originate on the flanks of the pile in the region from 5 to 8 ft. below the surface. The rise in temperature of a coal pile is therefore intimately connected with a complicated ventilating problem, while no means exist for observing or measuring the small and wayward ventilating currents involved.

It is well known that if coal can be sealed tight, as in a glass jar, the oxygen soon disappears from the interstitial air, and the coal cannot continue to heat because of lack of oxygen. In Fig. 8 horizontal distances represent the amount of ventilation in any portion of a coal pile and vertical distances represent rise in temperature. With no ventilation there will be no rise in temperature and the zero point will represent the condition of coal sealed from the air or so densely packed that air cannot circulate through it.

If, on the other hand, there is sufficient ventilation, the heat is all carried away as fast as it is generated

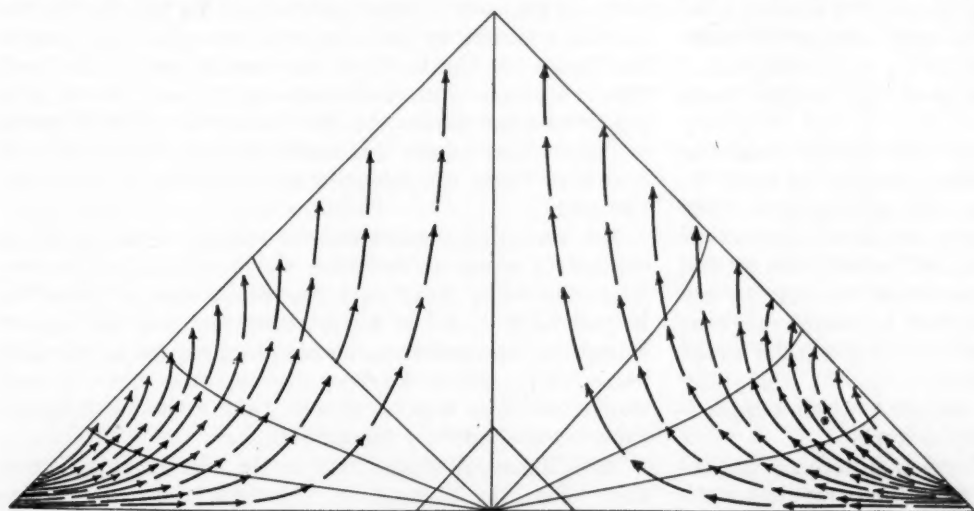


FIG. 7.

Same Pile Showing Ventilation

The frequency of arrows suggests the intensity of the circulation. In the zone between excess ventilation and no ventilation lies the area accessible enough to air to be made chemically active, but so inaccessible that the air cannot reach it in a volume that will suffice for its cooling.

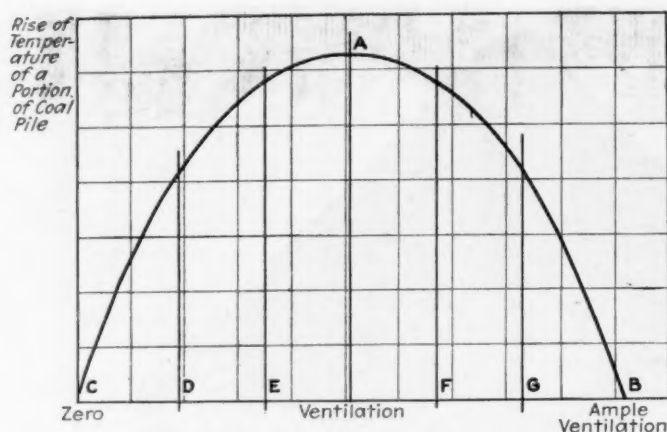


FIG. 8. CURVE SHOWING HOW HEATING IS RELATED TO VENTILATION

This graph exemplifies how a zero rise *C* in temperature may result from lack of ventilation and a maximum *A* from a ventilation that causes heating without any corrective cooling, and a zero rise *B* from such a draft that the heat is removed as fast as it forms.

and some point, as "*B*" on the zero line, must represent this condition, as in the case of coarse coal. At some point, as at "*A*" between these two extremes, there may be a condition of ventilation wherein just enough oxygen will be supplied to provide for a maximum rise in tem-

perature. What sort of curve represents all of the intermediate conditions between "*C*," "*A*," and "*B*," is unknown, but that this curve must first ascend and then descend is quite evident.

This curve teaches that if we have a condition of ventilation as at "*D*" an increase in the ventilation to "*E*" will produce a more favorable condition for a temperature rise. On the other hand, if the original condition is at "*F*" and we increase the ventilation to "*G*" we can expect a reduction in temperature. Since we have no means of knowing just what the ventilation is in any given portion of a pile there is great hesitancy in advocating ventilating schemes to prevent heating, as we are as likely to make trouble as to prevent it unless extreme and uniform ventilation is assured.

These curves illustrate what are believed to be the principal factors in the problem of spontaneous combustion. There are many other minor factors. One of the chief difficulties encountered in the past has been that undue attention has often been given to minor factors, such as sulphur, height of pile, volatile matter, etc., while such important considerations as initial temperature, breakage in handling, freshness of coal and screening before storage have been overlooked or their importance minimized.

Mine-Safety Experts Discuss at Milwaukee Accidents, Health and Welfare—III

Dangers of Lighting Smudges in Mines for the Training of Mine Rescue Squads—Stench and Other Devices as Mine-Fire Warnings—Cleaning Blocked Battery Chutes—Banquet Reminiscences and Pleasantries—Word from Great Britain—Mine Safety and Safety "Drives"

BY R. DAWSON HALL
Editor Coal Age

CONTINUING the interesting discussion of R. H. Seip's paper on "Requirements of Rescue Training for Metal Miners," B. F. Tillson referred to that author's advocacy of surface training, saying that he was opposed to creating a foul atmosphere in any part of the mine for the purpose of instructing men in rescue work, because if the persons employed underground got accustomed to smelling smoke, instead of becoming alarmed and proceeding to track it up and give a warning they would say, "It's only another of those smudges that have been lighted to try out some rescue team" and so saying would dismiss the matter from their minds.

Mr. Harrington said the right way was to create the smoke in a return where the miners would not smell it. There should be training on the surface and also in the mine. The first should be for convenient observation of the man in training and for safety, and the second so that the man would get accustomed to wearing his apparatus under the conditions that he would confront in real rescue and recovery work. One of the great difficulties was to use the apparatus in the high temperatures often encountered in the mine, which temperatures would unfit some men for the work.

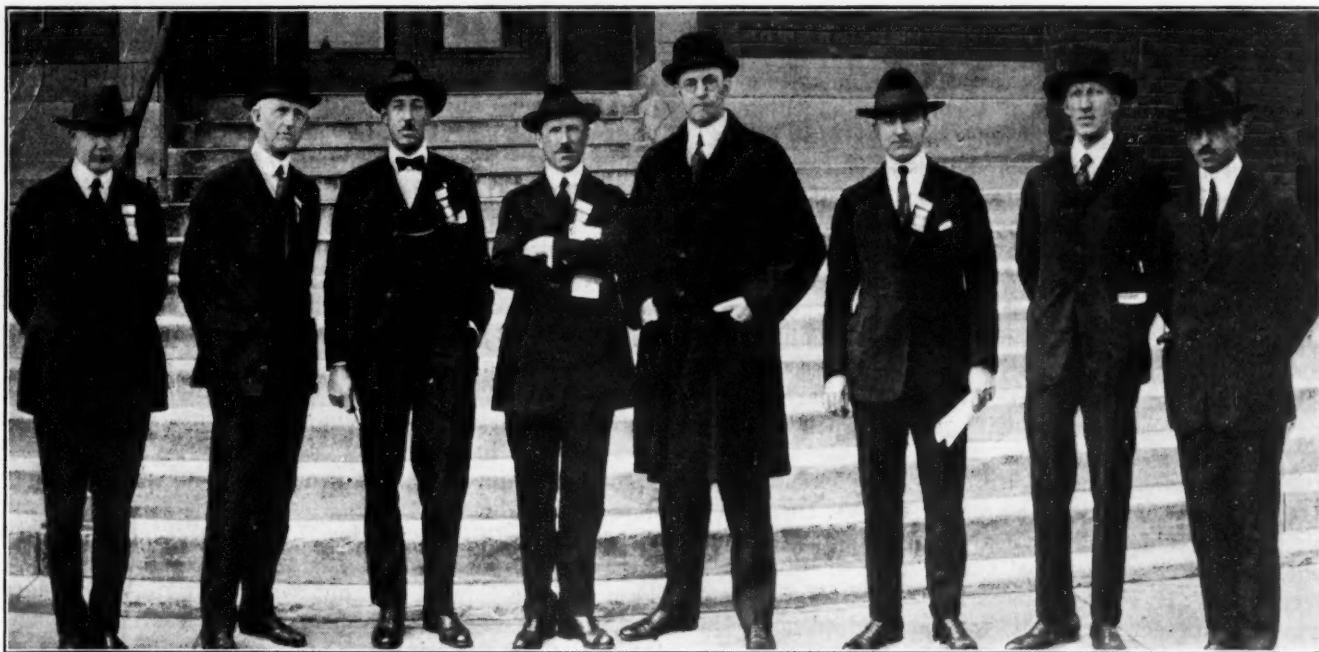
Mr. Tillson responded that there was nothing to prevent a duplication of the high mine temperature by the

use of steam heat. He recalled one time finding a fire in a mine. It was making quite a little smoke, which he knew must have been apparent to the men who were working at points to which the air current passing the fire was traveling. He asked the men why they failed to show the proper interest, whereupon they told him that they thought it was "just another movie."

The New Jersey Zinc Co. had been having some motion pictures taken of inside conditions. To this end a fire had been ignited in the mine so as to create the correct semblance for the work of the camera men. This had filled the mine with the smoke of burning wood, and for some time afterward the men were little disposed to believe that smoke was evidence that a fire had been ignited without the intention or knowledge of the management.

Mr. Woodburn said that such smoke areas could be created in parts of the mine above water level and on a Sunday when there were few or no men in the mine. In fact he did most of his work on that day, calling out thirty-two men and running his practices for a full eight hours. He used smoke from burning fuse and not wood smoke, so there was no risk of taking the smell of his fires for the smell of burning timber.

Mr. Tillson called attention to Mr. Woodburn's dictum, that "Flashing signals on the electric circuits is ap-



NEW OFFICERS ELECTED AT THE NINTH ANNUAL CONGRESS OF THE NATIONAL SAFETY COUNCIL
 Reading from left to right: Treasurer, W. H. Frater; General Manager, C. W. Price; Second Vice-President, L. A. De Blois, manager of safety section, E. I. du Pont de Nemours & Co.; First Vice-President, W. H. Cameron, secretary-treasurer, Workmen's Compensation Bureau, New York City; President, C. P. Tolman, chief engineer, National Lead Co.; Third Vice-President, W. E. Worth, assistant manager, industrial relations department, International Harvester Co.; Fourth Vice-President, J. A. Oartel, safety engineer, Carnegie Steel Co.; Secretary and Chief Engineer, Sidney J. Williams.

parently the most feasible and usual" means of warning the men of a mine fire. He said it was certain that flashing signals could not be provided at the working face because the shots would dislodge the wires. He thought that it might be well to ascertain from the members present what success had been secured from the use of stenchers.

Mr. Harrington said that by feeding valeric acid into the compressed-air pipe lines it was possible at the Butte mine where it was tried to get a stench in the most remote working face within five minutes, and that at a time when but little drilling was going on and the passage of air was comparatively slow. The experiment was tried between 4 and 5 p.m., when drilling had largely ceased. One of the members said that his company used both stenchers and electric flashes, the stenchers for the miners and the flashes for those working on the roads.

Mr. Tillson said that in his belief allyl sulphide (the active principle of garlic), while an effective odor in some ways, was too common a smell around the mines where European workmen were employed. It would, he feared, not seem out of place in mine workings and might occur without creating any inquiry. He would much like to know if oil of peppermint were being used. He had utilized it in the allocation of leaks in the pipe line and he was willing to state that it gave the required results. Mr. Martinson said that he had found it quite hard to obtain valeric acid in quantity to satisfy his needs.

Mr. Tillson spoke also of efforts being made to create apprehension, or at least a disinclination to continue at work, by shutting off the compressed air or electricity or to create inquiry and discomfort by replacing air by water in the compressed-air pipes. Mr. Woodburn said that it had been suggested that a vacuum be created in the compressed-air system, and the valves so arranged that the inflow of air through them would cause them to whistle a warning, but the time required to change from a positive to a negative pressure was too great for this plan to be successful.

H. H. Stoek said that after the Cherry disaster a law was passed in Illinois requiring the installation of warning gongs, but it was remarkable how the interposition of a pillar between the gong and the working place would render the sound entirely inaudible. Because of the proved inadequacy of the gong the law requiring its use was removed from the statute books within a year.

Mr. Tillson then requested those present to answer his question "What should be done to clear a blocked raise?" Mr. Gidley said that where the raise was blocked partly by fine material the application of water was often found of great value. In some raises an old rope or chain was made a permanent part of the chute. By shaking this the obstruction might be removed. The rope seemed to give a reasonable length of service and in no case was anything but scrap material used for this purpose.

FORSTER ROASTS HIS COMMITTEE ASSOCIATES

One member said that there were always plenty of 2 x 2-in. sticks kept in the tramroads. These could be spiked together and a stick of dynamite fastened to the end of the pole thus formed. An automobile storage light was used as a searchlight for the examination of the obstruction and the shot located accordingly. It was found that a yellow light would, as on the high road, penetrate the foggy atmosphere better than a white light. Mr. Stoek declared that trouble of this sort was quite frequent in the anthracite mines, but there a manway followed the raise and the obstruction could be barred loose from that point of vantage and the danger in starting the coal obviated.

In the evening a banquet was held in the Auditorium, the toastmaster being Phil A. Grau, business manager of the Milwaukee Association of Commerce. Well did he acquit himself of his duties. The principal speakers were R. W. Campbell, chairman of the Central Safety Committee, Illinois Steel Co., Chicago, and former president of the National Safety Council, and H. Walter

Forster, of the Independent Associates, Philadelphia, who has been a leading Executive Committeeman for years and now is inexorably thrust forth, much to everybody's regret—the victim of a constitution which forbids longer continuation in office.

Mr. Forster's "Impressions" will long be remembered, for in jocular vein he roasted every one of light and leading in the safety movement, without, however, leaving any soreness anywhere. R. C. Richards, the president, and Lew R. Palmer, a past president, were both sick and unavoidably absent. Messages of good cheer were sent to both. Mr. Campbell in his reminiscences recalled the growth of the National Safety Council in eight years from a body with \$1,400 of a yearly budget and forty members to one with yearly expenditures of \$233,000 and 4,051 members.

The election announced C. P. Tolman as president, W. R. Cameron as first vice-president, L. A. De Blois as third vice-president, J. A. Oartel as fourth vice-president, C. W. Price as general manager, S. J. Williams as secretary, W. H. Frater as treasurer and R. T. Solensten as assistant secretary. It was announced also that whereas there had been seven fatal accidents in Milwaukee a year ago, during the present safety week up to that date, Thursday, there had been but one.

NEW BRITISH ASSOCIATION SENDS DELEGATES

Major H. F. Doidge was present and brought the greetings of Lord Levelhulme of the British Industrial Safety First Association. He said that while Great Britain had been early in providing legislation protecting the working man it had taken the cue of the National Safety Council in establishing an association for the creation of the safety spirit. The association, he said, was barely a year old, but "in the language of your country, it is already 'some kid.'" A dance followed the banquet.

On Friday morning the mining section held its final session with a paper by John L. Boardman, Anaconda Copper Mining Co., Butte, Mont., entitled "Accidents from Falls of Roof and Ground in Metal Mines." This paper will be given a minimum of space here though it was by no means without interest. The paper, of which W. S. Bates was co-author, showed that 37 per cent of the accidents were due to falls of rock and ore. It showed that drifting and crosscutting, comprising only 16 per cent of the mining work, caused 24 per cent of the accidents.

IS DANGER EVER ITS OWN DEFENCE?

The authors are at a loss to explain this except by saying that carelessness is the source of the great accident rate. They declare it is the safest kind of work, that the miners are close to the roof and with care in removing loose material it is quite easy to prevent accidents. The timbering is simple and easy. "Square-set stoping, which from the nature of the work should be considered more hazardous and which is estimated at 70 per cent of the total mining work, has caused only 63 per cent of the falling-ground accidents."

"From this information," they add, "we may deduce the fact that in the more dangerous mine workings the miner by increased vigilance renders himself less liable to injury than does the man working in the 'safe place' who puts too much trust in the ground holding up. However, there is nothing to be wondered at in this. We all know the experienced repairman who is employed in mining through caved ground.

"He is always to be found around the most dangerous places in the mine, and is rarely if ever caught by a fall. It is a pleasure to watch him work. When he first comes on shift he proceeds to make himself safe, and when he starts mining he is ever on the alert and as quick as a cat, and if a fall of ground does come, he beats the fall to a place of safety by many feet."

The authors then describe a safety drive made at the many mines around Butte which lasted four weeks (27 days). The accident rate fell 52.6 per cent as compared with the record of two months in the year before and 47.5 per cent as compared with the record of the previous year, the comparisons being based on the number of menshifts worked. The leading mine worked 5,357 shifts without a single accident, and another mine with less tonnage had an equally good record. This was a splendid achievement, as every form of accident was included in the reckoning—fatal, serious and slight.

An interesting article by H. A. Kudlik, chief safety inspector of the Hudson Coal Co., Scranton, was then read. It was pointed out that systematic timbering does not attempt to say how many timbers shall be set but what shall be the minimum number used and where this minimum shall be located. The miner should always set what safety demands and no less than that number. Miners always resent setting timber anywhere near the face, saying that the shots will displace the posts. Even though only one post has to be reset in a month, the miner will oppose following the rules made to assure him of safety.

Mr. Conibear suggested that some of the accidents might be ascribed to the lowered quality of mine timber resulting from the scarcity of good stands of trees, but Mr. Flyzik stated that in the state of Washington, where there was plenty of timber, the accidents from falls of roof did not appear in any way abated.

NEW INQUIRY INTO ROOF FALLS SUGGESTED

He suggested that the Bureau of Mines would do well to ascertain how many were killed where timber was delivered at the working face and how many where the posts were placed so far from the end of the room or drift that the miner had difficulty in supplying himself. He believed that the labor and time involved in moving timber from a relatively remote point induced the miner to take unnecessary chances. Mr. Bagley, the state mine inspector in Washington, is preparing to make a statistical investigation of this character. Henry Roark said that the Clinchfield Coal Corporation places its own timber and W. W. Gidley remarked that he had noted the fact that the timber now being obtained did not equal that of past years.

In metal mines, Mr. Seip said, taking all accidents into consideration, accidents from falls of ground were not the predominant cause of injury. Mr. Gidley concurred with this statement. The old question came up as to the possibility of the mine foreman taking the time to compel a man to stand timber properly with the rapid-fire progress through the mine now required of him. Mr. Conibear said that at the twenty-two mines of the Cleveland-Cliffs Iron Co. he was the sole safety man. The company had doubled the number of shift bosses and expected them to spend the necessary time to see that timber was set so as to safeguard the men. With plenty of men in charge of the operation of a mine it was possible to obtain safe timbering without any special force of safety men.

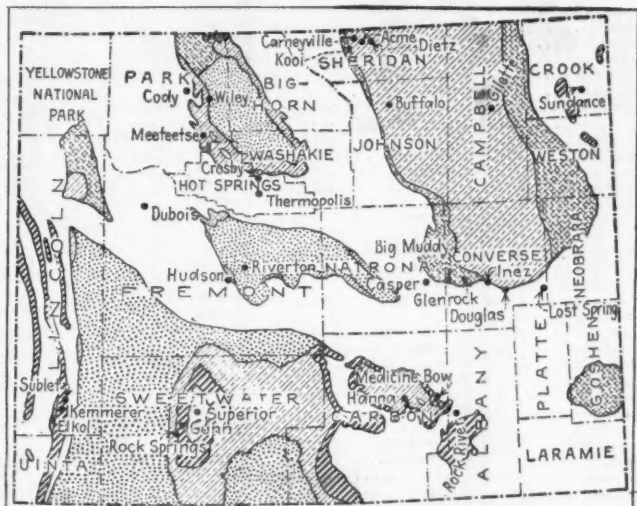
(To be continued next week)

Temperatures at Which Ash from Western Coals Fuses to a Sphere

Bureau of Mines Tables Show the Temperatures at Which the Ash of Several Coals in the West Will Fuse, the Types of the Various Coals, Places Where Found, Their Ash and Sulphur Content

IN OUR issue of Sept. 30, pp. 677-682, we published Bureau of Mines tables on the "Softening Temperatures of Coal Ash from Western Coals," the states covered being California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah and Washington. The territory of Alaska also was covered by the same article, the authors of which were W. A. Selvig, L. R. Lenhart and A. C. Fieldner. The tables herewith, as also those preceding, are published by permission of the Bureau of Mines.

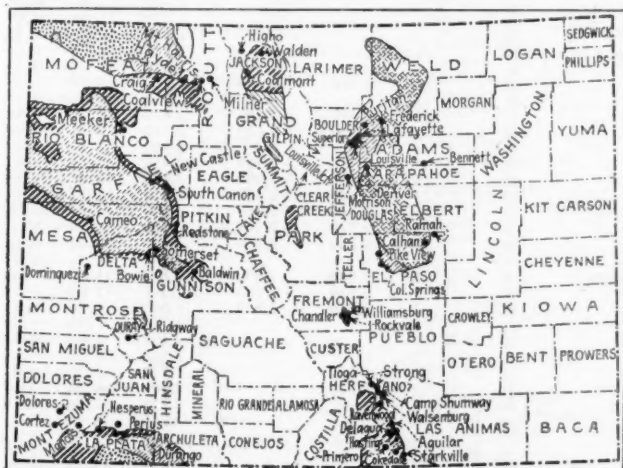
The three state maps which accompany this article were especially prepared by *Coal Age* to show the places that are mentioned in the tables and the areas of coal which the states contain. They will be found of interest, however, for general reference. In the table "L" stands for lignite, "Sb-B" for sub-bituminous and "B" for bituminous coal. It will be noted that nearly all the western half of North Dakota is underlain with lignite or with strata that may contain workable lignite. It is remarkable how large a portion of Wyoming has coal measures, though in a large part of the southwestern section of the state the depth of the measures is so great as to make the possibility of their being mined extremely doubtful. Wyoming also has some small areas of anthracite.



- Areas known to contain workable bituminous coals, contain also small anthracite deposits
- Areas known to contain workable subbituminous coal
- Areas possibly containing workable subbituminous coal
- Areas probably containing subbituminous coal under heavy cover

WYOMING'S AREA OF THICK COAL

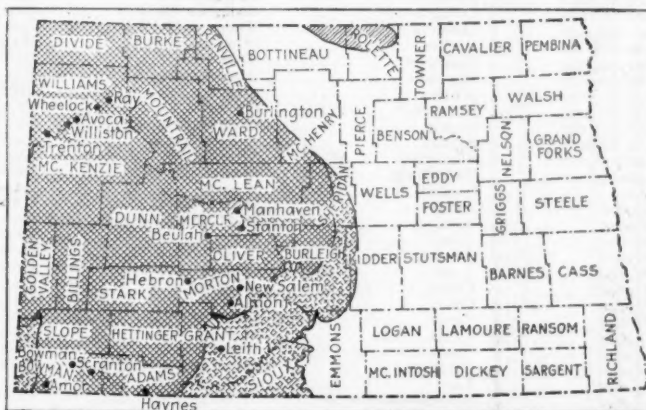
In the southwest is the great Green River region, with the Rock Spring field in its heart and the Cumberland-Kemmerer field in the extreme southwest, Uinta County. In the center of the state is the Wind River region, in Fremont and Natrona Counties. The Powder River region lies toward the east and contains such well-known fields as Sheridan, Carneyville, Kool and Dietz, in Sheridan County. The Big Horn Basin region lies in Big Horn Park and Washakie Counties to the west of the Powder River region.



- Areas known to contain workable bituminous coals, contain also small anthracite deposits
- Areas that may contain workable (bituminous and anthracite)
- Areas known to contain workable subbituminous coal
- Areas possibly containing workable subbituminous coal
- Areas probably containing workable coal but under heavy cover
- Areas probably containing subbituminous coal under heavy cover

COAL FIELDS OF COLORADO

In the extreme northwest corner, in Moffat and Routt Counties, is the Tampa field. Eastward of that area is the North Park field, in Jackson and Grand Counties. Southward is the Grand River field of Rio Blanco, Garfield, Meas and Delta Counties, having at its eastern end the Crested Butte field, of Gunnison County. In the southwestern corner of the county is the Durango-Gallup field, in Montezuma, La Plata and Archuleta Counties. The small South Park field, in Park County, occupies the center of the state and east of it is the Denver region, stretching from El Paso County in the south to Weld County in the north. Canon City field, in Fremont County, is a small but valuable field south of the Denver area. Most important of all, the Trinidad field lies south of the Canon field on the New Mexico line.



- Areas known to contain workable lignite
- Areas that may contain workable lignite
- Areas possibly containing workable subbituminous coal

LIGNITE FIELDS OF NORTH DAKOTA

This state produced only 719,733 tons in 1919, of which 173,744 tons was used locally and 19,943 was used for steam heat at the mines. The mines of the U. S. Reclamation Service is at Williston, Williams County, near the Montana line.

The Colorado fields are widely separated, the best known field being that which is most southeasterly, lying in Huerfano and Las Animas Counties and containing such well known towns as Walsenburg, Rouse, Delagua, Trinidad, Primero, Segundo, Aguilar, Hastings, Morley and Cokedale.

Softening Temperatures of Coal Ash from Western Coals

COLORADO

County	Town	Mine	Coal Bed	Type of Coal	No. of Samples	Softening Temperature, Deg. F.			Average Analysis of Dry Coal, Percentage of	
						Lowest	Highest	Average	Ash	Sulphur
Adams	Bennett	Thomas	Unnamed	Sb.-B.	1			2,120	11.35	0.48
Boulder	Lafayette	Simpson	Lower Simpson	Sb.-B.	2	2,030	2,130	2,080	4.45	0.48
Boulder	Louisville	Acme	Lower Acme	Sb.-B.	1			2,040	5.46	0.40
Boulder	Louisville June	Monarch No. 2	Unnamed	Sb.-B.	2	1,990	2,030	2,010	6.54	0.33
Boulder	Superior	Industrial	Unnamed	Sb.-B.	3	2,060	2,140	2,100	6.89	0.37
Delta	Bowie	King	King	B.	2	2,470	2,740	2,600	5.06	0.60
Delta	Dominquez	Wells Gulch	Unnamed	B.	1			2,160	6.20	1.01
El Paso	Calhan	Mosby	Mosby	Sb.-B.	1			2,520	20.77	0.45
El Paso	Colorado Springs	El Paso	Unnamed	Sb.-B.	3	2,190	2,260	2,230	7.99	0.43
El Paso	Colorado Springs	Rapson No. 2	Lower	Sb.-B.	1			2,210	7.96	0.50
El Paso	Pike View	Pike View	"A"	Sb.-B.	6	2,070	2,350	2,250	7.37	0.41
El Paso	Ramah	Purdon	Purdon	Sb.-B.	1			2,510	27.45	0.48
Fremont	Chandler	Chandler	Canon	Sb.-B.	2	2,080	2,130	2,100	7.25	0.49
Fremont	Rockvale	Rockvale	Rockvale	Sb.-B.	2	2,080	2,350	2,220	10.43	0.65
Fremont	Williamsburg	Magnet	Magnet	B.	2	2,030	2,130	2,080	7.90	0.99
Garfield	New Castle	Vulcan	Allen	B.	5	2,060	2,370	2,220	5.75	0.50
Garfield	South Canon	South Canon	Wheeler	B.	2	2,360	2,410	2,380	8.78	0.58
Gunnison	Baldwin	Mount Carbon	No. 2	B.	1			2,310	7.30	1.05
Gunnison	Mount Carbon	Kubler	No. 2	B.	1			2,380	9.51	0.49
Gunnison	Somerset	Somerset	Unnamed	B.	2	2,240	2,240	2,240	9.74	0.46
Huerfano	Camp Shumway	Gordon	Cameron	B.	2	2,280	2,300	2,290	11.48	0.94
Huerfano	Camp Shumway	Vesta	Walsen	B.	1			2,670	9.89	0.68
Huerfano	Delcarbon	Brennan	Robinson	B.	2	2,180	2,350	2,260	8.09	0.72
Huerfano	Delcarbon	Turner	Cameron	B.	1			2,240	7.33	0.71
Huerfano	Delcarbon	Turner	Walsen	B.	5	2,230	2,430	2,330	11.29	0.66
Huerfano	Farr	Cameron	Walsen	B.	3	2,430	2,620	2,510	15.43	0.50
Huerfano	Lester	Lester	Walsen	B.	2	2,400	2,640	2,520	11.08	0.54
Huerfano	Maitland	Maitland	Lenox	B.	1			2,680	13.70	0.76
Huerfano	Maitland	Maitland	Robinson	B.	1			2,400	15.31	0.64
Huerfano	McGuire	Pinon	Cameron	B.	2	2,330	2,340	2,340	10.30	0.78
Huerfano	Oakview	Oakdale	Unnamed	B.	3	2,130	2,690	2,360	10.50	0.57
Huerfano	Oakview	Oakdale No. 1	Mammoth	B.	1			2,330	8.19	0.50
Huerfano	Pictou	Pictou	Walsen	B.	1			2,670	11.62	0.72
Huerfano	Pictou	Pictou	Walsen and Robinson	B.	1			2,210	10.48	0.59
Huerfano	Ravenwood	Ravenwood	Cameron	B.	2	2,500	2,520	2,510	8.38	0.77
Huerfano	Strong	Sunnyside	Walsen	B.	2	2,480	2,530	2,500	9.24	0.65
Huerfano	Tioga	Kebler No. 2	Robinson	B.	2	2,100	2,150	2,120	8.29	0.56
Huerfano	Toltec	Toltec	Cameron	B.	1			2,380	10.51	1.01
Huerfano	Toltec	Toltec	Walsen	B.	1			2,700	10.43	0.81
Huerfano	Walsen	Robinson No. 1	Robinson	B.	3	2,400	2,440	2,410	11.65	0.54
Huerfano	Walsen	Robinson No. 2	Walsen	B.	3	2,280	2,380	2,340	10.84	0.55
Huerfano	Walsenburg	Mutual	Walsen	B.	1			2,500	15.93	0.47
Jackson	Coalmont	Riach	Riach	Sb.-B.	1			2,580	8.94	0.91
Jackson	Higbo	Mitchell	Mitchell	Sb.-B.	1			2,270	12.56	1.05
Jackson	Walden	Marr	Sudduth	Sb.-B.	1			2,440	4.31	0.19
Jackson	Walden	McCullum	Sudduth	Sb.-B.	1			2,370	7.78	0.33
Jackson	Walden	Sudduth	Sudduth	Sb.-B.	1			2,440	6.25	0.74
Jackson	Walden	Winscom	Winscom	Sb.-B.	1			2,190	14.80	0.98
Jefferson	Morrison	White Ash	Jumbo	Sb.-B.	1			2,290	8.12	1.05
La Plata	Durango	Cinder Butte	"B"	Sb.-B.	1			+3,010	19.13	0.68
La Plata	Durango	San Juan	Unnamed	B.	2	2,990	3,010	3,000	7.05	0.74
La Plata	Durango	Soda Spring	"B"	B.	1			2,550	15.74	0.72
La Plata	Hesperus	Hesperus	Hesperus	B.	2	2,710	3,000	2,860	6.37	0.71
La Plata	Hesperus	Mormon	Unnamed	B.	1			+3,010	14.18	0.90
La Plata	Hesperus	Wheeler	Upper No. 5	B.	1			2,950	7.12	0.62
La Plata	Mancos	Hauert	Spencer	B.	1			+3,010	9.57	0.69
La Plata	Perine	Perins Peak	Peacock	B.	3	2,060	2,540	2,320	5.88	2.42
Las Animas	Aguilar	Empire	Walsen	B.	1			2,360	13.39	0.69
Las Animas	Aguilar	Royal	Peerless	B.	1			2,780	11.83	0.73
Las Animas	Aguilar	Royal	Walsen	B.	1			2,420	11.16	0.69
Las Animas	Bon Carbo	Bon Carbo	Primer	B.	1			2,300	14.17	0.50
Las Animas	Brodhead	Temple No. 9	Brodhead No. 4	B.	1			2,320	8.20	0.45
Las Animas	Brodhead	Temple No. 10	Rugby	B.	1			2,430	11.13	0.46
Las Animas	Cokedale	Cokedale No. 1	Cokedale	B.	4	2,710	2,990	2,920	17.74	0.54
Las Animas	Delagua	Cass	Delagua	B.	1			2,430	8.65	0.75
Las Animas	Delagua	Delagua	Delagua	B.	4	2,310	2,480	2,420	11.51	0.56
Las Animas	Delagua	Delagua No. 1	Delagua	B.	3	2,550	2,610	2,570	7.51	0.60
Las Animas	Delagua	Delagua No. 3	Delagua	B.	1			2,300	8.63	0.53
Las Animas	Forbes	Forbes No. 9	Walsen	B.	4	2,310	2,580	2,400	10.04	0.73
Las Animas	Hastings	Hastings	Berwind (?)	B.	3	2,650	2,990	2,770	13.11	0.75
Las Animas	Hastings	Hastings	Hastings	B.	3	2,600	2,810	2,680	16.51	0.64
Las Animas	Morley	Morley	Engle-Starkville	B.	5	2,340	2,960	2,660	15.01	0.71
Las Animas	Primer	Primer	Primer	B.	3	2,370	2,560	2,460	13.54	0.51
Lar Animar	Sopris	Piedmont	Lower	B.	2	2,740	2,930	2,840	15.02	0.66
Las Animas	Sopris	Sopris No. 2	Cameron	B.	1			2,790	18.11	0.75
Las Animas	Starkville	Starkville	Engle-Starkville	B.	5	2,800	2,990	2,890	15.31	0.60
Las Animas	Tollerburg	Toller	Berwind	B.	2	2,530	2,760	2,640	12.08	0.68
Mesa	Cameo	Cameo	Cameo	B.	2	2,710	2,960	2,840	9.58	0.63
Moffat	Axial	Battle Era	Unnamed	B.	1			2,220	7.17	1.04
Moffat	Axial	Ed Collom	Unnamed	B.	1			2,350	4.49	0.78
Moffat	Axial	James	Unnamed	B.	1			2,380	4.37	0.61
Moffat	Axial	Joe Collom	Collom	B.	1			2,430	2.51	0.36
Moffat	Axial	Shafer	Unnamed	B.	1			2,300	4.50	0.68
Moffat	Craig	Blevins	Unnamed	Sb.-B. (?)	1			2,210	7.76	0.79
Moffat	Craig	Hart	Unnamed	Sb.-B.	1			2,740	6.49	0.62
Moffat	Craig	Kimberley	Unnamed	Sb.-B.	1			2,190	5.57	0.92
Moffat	Craig	Roby	Unnamed	Sb.-B.	1			2,890	4.87	0.69
Moffat	Craig	Seick	Unnamed	Sb.-B.	1			2,010	9.29	0.85
Moffat	Craig	Walker	Unnamed	Sb.-B.	2	2,080	2,090	2,080	7.36	1.06
Moffat	Lay	Lay	Unnamed	Sb.-B. (?)	1			2,440	6.75	1.04
Moffat	Mount Streeter	Dollom	Collom	Sb.-B. (?)	2	2,230	2,540	2,380	2.90	0.33
Montezuma	Cortez	Cortez	Unnamed	B.	1			2,980	15.42	0.62
Montezuma	Cortez	Hamilton Prospect	Unnamed	B.	1			2,710	13.64	0.50
Montezuma	Cortez	Jackson	Spencer (?)	B.	3	2,240	2,560	2,370	6.36	0.54
Montezuma	Cortez	Mowry	Unnamed	B.	2	2,110	2,130	2,120	16.13	7.64
Montezuma	Cortez	Todd	Spencer	B.	3	2,190	2,380	2,260	7.63	0.78
Montezuma	Dolores	Prospect	Unnamed	B.	1			2,810	9.11	0.59
Montezuma	Mancos	Old Spencer	Peacock	B.	1			2,430	5.82	1.08
Montezuma	Mancos	Spencer	Spencer	B.	1			2,510	4.80	0.66
Ouray	Ridgway	Low Creek	Low Creek	B.	1			2,450	8.24	0.68
Pitkin	Redstone	Placita	Unnamed	B.	1			2,370	6.75	0.50
Rio Blanco	Meeker	Black Diamond	Lord	B.	1			2,990	8.95	0.55
Rio Blanco	Meeker	Cornrike	Unnamed	B.	1			2,310	2.57	0.33
Rio Blanco	Meeker	Fairfield	Unnamed	B.	1			2,370	6.97	0.96
Rio Blanco	Meeker	Meeker	Old Pollard	B.	1			2,310	6.68	0.50
Rio Blanco	Meeker	Montgomery	Unnamed	B.	1			2,210	7.00	0.81
Rio Blanco	Meeker	Sulphur Creek	Unnamed	B.	1			2,780	9.26	0.66
Rio Blanco	Meeker	Wesson	Unnamed	B.	1			2,730	7.02	0.95
Routt	Coalview	Routt-Pinnacle	Bear Run	B.	1			2,400	7.84	0.54
Routt	Hayden	Carey	Unnamed	Sb.-B.	1			2,480	6.52	0.47
Routt	Hayden	Dry Creek	Unnamed	Sb.-B.	1			2,340	4.54	0.45
Routt	Hayden	Green	Green	Sb.-B.	1			2,250	5.26	0.50

Softening Temperatures of Coal Ash from Western Coals—Continued

COLORADO—Continued

County	Town	Mine	Coal Bed	Type of Coal	No. of Samples	Softening Temperature—			Average Analysis of Dry Coal.		
						Lowest	Deg. F. Highest	Average	Percentage of Ash	Sulphur	
Routt	McGregor	McNeil No. 1	Wolf Creek	B.	1			2,780	12.07	0.53	
Routt	McGregor	McNeil No. 3	Wadge	B.	1			2,660	7.46	0.73	
Routt	Millner	Elk Creek	Wolf Creek	B.	2	2,540	2,980	2,760	10.72	0.50	
Routt	Mount Harris	Bear River	Unnamed	B.	1			2,420	5.64	0.57	
Routt	Mount Harris	Colorado and Utah No. 1	Harris	B.	3	2,580	2,870	2,710	6.96	0.49	
Routt	Mount Harris	International	Wolf Creek	B.	1			2,710	13.98	0.49	
Routt	Mount Harris	Mount Harris	Wadge	B.	8	2,570	2,940	2,820	6.30	0.46	
Routt	Mount Harris	Wadge	Wadge	B.	2	2,540	2,710	2,620	5.94	0.49	
Routt	Millner	Curtis No. 1	Curtis	B.	1			2,420	8.53	0.73	
Routt	Millner	Chergo	Wadge	B.	1			2,430	6.41	0.49	
Routt	Millner	Schuster	Unnamed	B.	1			2,600	6.01	0.55	
Routt	Oak Creek	Argo	Argo or Pinnacle	B.	4	2,330	2,520	2,420	4.62	0.50	
Weld	Frederick	Baum	Unnamed	Sb.-B. (?)	1			2,030	5.29	0.49	
Weld	Puritan	Puritan	Unnamed	Sb.-B.	1			2,170	4.75	0.45	

NORTH DAKOTA

Adams	Haynes	Nipper & Monroe	Haynes	L.	1			2,270	12.31	2.27	
Adams	Haynes	William Pinkham	Haynes	L.	1			2,140	12.68	2.21	
Bowman	Amor	Durkin Prospect	T Cross	L.	1			2,060	10.96	1.15	
Bowman	Bowman	Open Pit	Unnamed	L.	1			2,130	18.39		
Bowman	Scranton	Scranton	Harmon (?)	L.	1			2,180	12.47	1.01	
Mercer	Beulah	Beulah	Beulah	L.	1			2,270	9.51	1.07	
Mercer	Manhatten	Volmer	Manhatten	L.	1			2,140	9.75	0.66	
Mercer	Stanton	Teuber	Unnamed	L.	1			2,390	9.02	1.10	
Morton	Almont	Ramstand	Unnamed	L.	1			2,290	9.17	0.64	
Morton	Hebron	Hebron	Unnamed	L.	2	2,030	2,070	2,050	13.14	1.56	
Morton	Leith	Kolbank	Haynes (?)	L.	1			2,090	16.13	2.30	
Morton	Leith	Jones	Haynes (?)	L.	1			2,150	13.63	1.07	
Morton	New Salem	Dakota Products	Unnamed	L.	1			2,100	11.84	2.13	
Morton	New Salem	Unnamed	Unnamed	L.	1			2,180	12.83	1.07	
Ward	Burlington	Conon	Unnamed	L.	3	2,130	2,200	2,150	16.63	0.40	
Williams	Avoca	Bruegger	"C"	L.	1			2,240	7.39	0.51	
Williams	Ray	Pittsley	Unnamed	L.	2	2,240	2,310	2,280	8.02	0.62	
Williams	Trenton	Geltz	Unnamed	L.	1			2,270	11.90	2.41	
Williams	Wheelock	Monuen	Unnamed	L.	1			2,430	14.63	2.28	
Williams	Williston	Husebye	Ellithrope	L.	4	2,000	2,140	2,070	11.75	1.82	
Williams	Williston	Powell	"C"	L.	1			2,190	9.28	1.24	
Williams	Williston	U. S. Reclamation	Middle	L.	5	2,190	2,310	2,250	10.19	0.98	

SOUTH DAKOTA

Harding	Buffalo	Hilton	Unnamed	L.	1			2,400	18.40	1.59	
Harding	Buffalo	Mendenhall	Unnamed	L.	1			2,140	17.36	0.94	
Harding	Ralph	Newcomb	Widow Clark	L.	1			2,140	13.95	1.46	
Perkins	Lodgepole	Nelson	Unnamed	L.	1			2,180	15.73	1.14	
Perkins	Strool	Phillips	Unnamed	L.	1			2,130	15.64	2.02	
Perkins	Strool	Jones	Unnamed	L.	1			2,290	13.72	3.65	
Perkins	Strool	Knudsen	Unnamed	L.	1			2,120	17.23	1.65	

WYOMING

Campbell	Gillette	County Bank	Unnamed	Sb.-B.	1			2,090	14.66	2.06	
Campbell	Gillette	Local	"B"	Sb.-B.	1			2,350	11.03	1.96	
Campbell	Gillette	Prospect	"A" (?)	Sb.-B.	1			2,230	9.31	1.76	
Carbon	Hanna	Local	Unnamed	Sb.-B.	1			2,110	5.18	1.20	
Carbon	Medicine Bow	Johnson	Unnamed	Sb.-B.	1			2,150	7.91	0.98	
Carbon	Rock River	King	Unnamed	Sb.-B.	1			2,430	9.59	1.32	
Converse	Big Muddy	Big Muddy	Lower Big Muddy	Sb.-B.	1			2,100	9.15	0.77	
Converse	Big Muddy	Big Muddy	Upper Big Muddy	Sb.-B.	1			2,240	6.37	0.97	
Converse	Douglas	Outcrop	Lower Burned	Sb.-B.	1			2,090	11.65	0.50	
Converse	Glenrock	Country Bank	Unnamed	Sb.-B.	1			2,360	6.42	0.63	
Converse	Glenrock	Fairview	Unnamed	Sb.-B.	1			2,210	7.15	0.92	
Converse	Glenrock	Glenrock	Unnamed	Sb.-B.	1			2,110	7.79	0.92	
Converse	Glenrock	Prospect	Unnamed	Sb.-B.	1			2,110	9.61	0.55	
Converse	Inez	Diamond	Unnamed	Sb.-B.	1			2,110	15.30	1.68	
Converse	Inez	Inez	Unnamed	Sb.-B.	1			2,180	11.54	0.98	
Converse	Lost Spring	Harney Creek	Unnamed	L.	1			1,990	10.49	1.13	
Converse	Lost Spring	Haynes ProspeMt	Unnamed	Sb.-B.	1			2,310	7.77	1.57	
Converse	Lost Spring	Onyon	Unnamed	Sb.-B.	1			2,010	11.50	1.23	
Converse	Lost Spring	Prospect	"D"	Sb.-B.	1			2,260	5.93	0.37	
Converse	Lost Spring	Rosin	Unnamed	Sb.-B.	1			2,170	13.81	1.42	
Converse	Lost Spring	Sunset	Unnamed	Sb.-B.	1			2,320	16.65	0.80	
Crook	Sundance	Belshe	Unnamed	B.	3	2,150	2,490	2,260	14.99	6.09	
Fremont	Dubois	Prospect	Unnamed	Sb.-B.	1			2,180	15.84	4.00	
Fremont	Hudson	Hickey	Unnamed	Sb.-B.	1			2,150	5.46	0.90	
Fremont	Hudson	Indian	Unnamed	Sb.-B.	7	2,000	2,260	2,130	7.26	0.64	
Fremont	Hudson	McKinley	Mesa Verde	Sb.-B.	3	2,080	2,250	2,140	9.45	1.46	
Fremont	Hudson	Mitchell	Unnamed	Sb.-B.	2	2,280	2,310	2,300	9.55	0.98	
Fremont	Hudson	Proposia	Lander	L.	2	2,270	2,280	2,280	5.61	0.79	
Fremont	Riverton	Shipton	Unnamed	Sb.-B.	1			2,320	9.42	0.90	
Hot Springs	Crosby	Big Horn	Gebo	Sb.-B.	5	2,050	2,380	2,170	5.58	0.71	
Hot Springs	Kirby	Gebo	Gebo	Sb.-B.	15	1,860	2,210	2,020	4.40	0.65	
Hot Springs	Kirby	Gwynn Prospect	"B"	Sb.-B.	1			2,380	16.11	0.51	
Hot Springs	Meeteetse	Dickie No. 1 Prospect	Unnamed	Sb.-B.	1			2,510	11.06	0.82	
Hot Springs	Thermopolis	Berry Prospect	Unnamed	Sb.-B.	1			2,210	7.67	1.31	
Johnson	Buffalo	Prospect	"B"	Sb.-B.	1			2,180	9.37	0.79	
Johnson	Casper	Prospect	Unnamed	Sb.-B.	1			2,500	18.02	1.85	
Johnson	Casper	Prospect	Unnamed	Sb.-B.	1			2,360	9.30	0.70	
Johnson	Casper	Prospect	Unnamed	Sb.-B.	1			2,150	10.16	0.89	
Johnson	Casper	Pugsley	Unnamed	Sb.-B.	1			2,210	6.75	0.64	
Lincoln	Elkol	Elkol	Elkol	Sb.-B.	2	2,300	2,420	2,360	4.06	0.81	
Lincoln	Kemmerer	Kemmerer No. 6	Unnamed	B.	7	2,170	2,310	2,250	6.73	0.63	
Lincoln	Sublet	Kemmerer No. 5	No. 5	B.	4	2,180	2,240	2,210	5.72	1.02	
Natrona	Casper	Casper Prospect	Unnamed	Sb.-B.	1			2,120	7.18	0.92	
Natrona	Casper	Prospect	Unnamed	Sb.-B.	1			2,360	6.79	0.53	
Natrona	Casper	Red Ash	Unnamed	Sb.-B.	1			2,290	7.60	0.67	
Park	Cody	McGuffey	Unnamed	Sb.-B.	1			2,670	9.49	1.08	
Park	Meeteetse	Black Diamond	Unnamed	Sb.-B.	1			2,910	9.50	0.24	
Park	Meeteetse	Greybull	Unnamed	Sb.-B.	1			2,550	14.37	1.07	
Park	Wiley	Eagle	Unnamed	Sb.-B.	1			2,530	13.69	0.63	
Park	Wiley	East Wiley	Unnamed	Sb.-B.	1			2,310	9.23	1.07	
Park	Wiley	West Wiley	Unnamed	Sb.-B.	1			2,370	13.59	0.80	
Sheridan	Acme	Acme No. 1	Carney	Sb.-B.	16	2,100	2,330	2,250	4.84	0.49	
Sheridan	Acme	Acme No. 2	Carney	Sb.-B.	5	2,100	2,150	2,130	4.60	0.46	
Sheridan	Carneyville	Carney	Carney	Sb.-B.	1			2,150	3.68	0.43	
Sheridan	Carneyville	Carney No. 1	Carney	Sb.-B.	13	2,050	2,270	2,140	4.48	0.47	
Sheridan	Carneyville	Carney No. 2	Carney	Sb.-B.	6	2,050	2,200	2,140	5.00	0.51	
Sheridan	Carneyville	Model	Carney	Sb.-B.	4	2,130	2,270	2,190	9.26	0.45	
Sheridan	Dietz	Dietz No. 4	Dietz No. 2 (?)	Sb.-B.	9	2,120	2,220	2,180	9.03	1.30	
Sheridan	Dietz	Dietz No. 7	Dietz No. 7	Sb.-B.	8	2,040	2,220	2,150	6.39	0.64	
Sheridan	Kooi	Hughy Prospect	Monarch (?)	Sb.-B.	1			2,150	6.48	0.41	
Sheridan	Kooi	Kooi	Monarch	Sb.-B.	22	1,990	2,240	2,080	6.36	0.83	

Softening Temperatures of Coal Ash from Western Coals—Continued

County	Town	Mine	Coal Bed	Type of Coal	No. of Samples	Softening Temperature—			Average Analysis of Dry Coal. Percentage of Ash Sulphur	
						Lowest	Deg. F. Highest	Average		
Sheridan	Monarch	Monarch	Monarch	Sb.-B.	21	1,970	2,290	2,190	4.85	0.56
Sheridan	Monarch	New Monarch	Monarch	Sb.-B.	8	2,000	2,490	2,180	4.92	0.59
Sheridan	New Acme	New Acme	Monarch	Sb.-B.	4	2,150	2,410	2,320	4.32	0.67
Sweetwater	Gunn	Gunn-Onealy "B"	No. 11	Sb.-B.	3	1,900	2,030	1,970	2.44	1.06
Sweetwater	Rock Springs	Prospect	Tipton	Sb.-B.	1			1,980	15.33	7.52
Sweetwater	Superior	"B"	No. 1 Upper	B.	1			2,040	2.91	1.08
Sweetwater	Superior	"B"	No. 7	B.	4	2,190	2,410	2,330	3.92	1.05
Sweetwater	Superior	"C"	Unnamed	Sb.-B.	4	2,100	2,390	2,280	3.76	1.12
Uinta	Elkol	Elkol	No. 1	B.	2	2,380	2,400	2,390	4.61	0.75
Uinta	Frontier	Kemmerer No. 1	No. 1	B.	4	2,060	2,190	2,120	7.13	1.35
Uinta	Kemmerer	Prospect	Unnamed	Sb.-B.	1			1,920	3.05	2.38
Uinta	Susie	Kemmerer No. 4	Kemmerer No. 1	B.	2	2,040	2,270	2,160	6.82	1.42
Weston	Cambria	Antelope No. 3	Unnamed	Sb.-B.	3	2,600	2,980	2,790	18.38	5.40
Weston	Cambria	Antelope No. 4	Unnamed	Sb.-B.	3	2,750	2,870	2,810	16.85	5.55
Weston	Moorecroft	Prospect	Unnamed	Sb.-B.	1			2,400	8.13	0.76
Weston	Moorecroft	Prospect	Unnamed	Sb.-B.	1			2,310	9.62	1.31

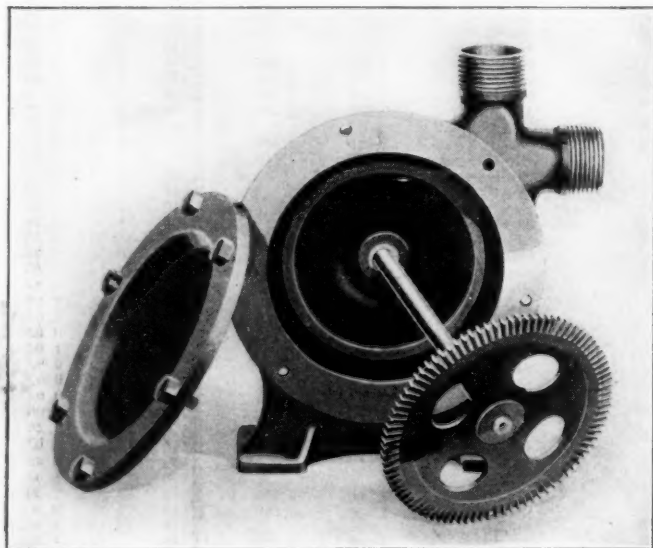
Centrifugal Pump Takes Water at the Outer Edge of Its Impeller

THE science of hydraulics or the art of handling liquids is one of the oldest as well as one of the most interesting problems with which the engineer has to deal. It is a far cry from the screw of Archimedes to the modern pump, yet the two are connected by a continuous chain of invention and improvement.

Probably the latest radical departure from the beaten path in pump construction is embodied in a machine for handling water recently developed and placed upon the market by the Western Pump Co., of Davenport, Iowa, and called the "Westco" pump. A line of sizes has been designed for this machine embracing a wide range of capacities against any pressure up to 200 lb. per stage, the sizes of the pump ranging from one no larger than an ordinary watch up to a machine that will deliver 1,000 gallons per minute.

PUMP CONTAINS ONLY ONE MOVING PART

As has been stated, this pump is a radical departure from current practice in design. It contains but one moving part, known as the impeller. This, as may be seen in the accompanying illustration, is roughly a disk bearing upon its circumference a series of vanes upon either side of the central disk web. The impeller thus



CENTRIFUGAL PUMP OF NEW DESIGN

Instead of taking water at the center and expelling it at the periphery, this pump both takes and discharges water at the periphery, thus, it is claimed, greatly reducing the internal friction of the machine. A capacity of as much as 1,000 gal. per min. is attained by the larger machines.

constructed revolves at high velocity within a casing that contains a suitable passage for the water beyond the tip of the impeller vanes.

In the ordinary centrifugal pump, as is well known, the water is drawn into the eye or central portion of the impeller and is discharged at the circumference. In the Westco pump the water is taken in at the circumference and is discharged from the circumference. The internal friction of the machine is thus largely reduced.

SIMPLICITY AND EXTREME SKILL EMBODIED

While the construction of this machine is extremely simple, considering the fact that its only motion is one of revolution, the principles of design call for a high degree of engineering skill and practical experience. The diameter, thickness and speed of the impeller, as well as the number, length and width of blades, also the diameter, area and cross-section of the water channel must all be accurately determined. The operation of the pump as a whole is dependent upon each of these factors as well as its relation to the others. The interrelationship of each must therefore necessarily be predetermined for every model.

This type of pump may be used to handle small or large quantities of water under all pressure conditions where low- and high-duty piston pumps or single- or multi-stage centrifugal machines would be normally required. It has been subjected to severe and long-continued tests under operating conditions and has proved itself a practical success.

Urges Americans to Sell Europe Raw Rather Than Finished Products

WITH the improved banking system now in force a business panic in this country would be chargeable to gross inefficiency and dereliction of duty on the part of business men and bankers, James S. Alexander, president of the National Bank of Commerce in New York, declared in an address at the eleventh annual convention of the American Manufacturers' Export Association, held in New York City, Oct. 14. Answering the charge that bankers fail to co-operate with business in times of financial stress, he said that the action of the banks in conserving credit was the best co-operation they could extend under recent financial conditions.

The country's credit structure was never better built than it is today, he said, and in view of the elasticity given business conditions by the Federal Reserve system, the country need never see another panic. Principles governing the domestic situation, particularly the duty of banks to readjust the credit situation when necessary, apply with especial force to the export trade, he said. He expressed the belief that American manufacturers should market raw rather than finished products to Europe if a sound basis is to be laid for equalizing the existing adverse trade balances.



Discussion by Readers

Edited by
James T. Beard

Essential Requirements in Longwall Work

Success in longwall work depends primarily on the proper control of the roof pressure, which can only be obtained by the building of good packwalls and maintaining a uniform system of timbering at the working face, so as to throw only sufficient pressure on the coal face to break down the coal and produce a uniform settlement of the roof in the gob.

BELIEVING that the only system of mining that can be successfully applied to the working of the thin seam of coal described by L. E. R., *Coal Age*, Aug. 19, p. 403, I would draw attention to the following requirements to insure success in such work:

As in other methods of mining, there are two systems in longwall mining, known as "longwall advancing" and "longwall retreating," respectively. These differ mainly in the fact that when employing the latter system the headings are driven to the boundary of the property before opening up the longwall face. In the advancing

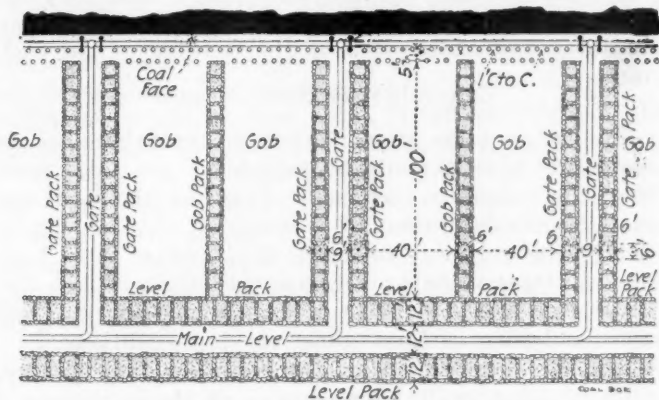


FIG. 1. SHOWING GATEROADS LEADING TO LONGWALL FACE

system of longwall the complete extraction of the coal is started either at the foot of the shaft or, preferably, at the boundary of a sufficient pillar, which is left for the protection of the shaft.

The use of the retreating system requires a larger capital than the advancing system, there being no returns on the investment until the boundary is reached and the extraction of coal begins. A frail roof or soft bottom, however, will often require the retreating system.

In all longwall work an important feature is the direction of the working face. If the conditions will permit better results are obtained and a larger proportion of lump coal is realized by working the coal "face on." In other words, the direction of the face is then parallel or nearly so to the face cleats of the coal.

Under a heavy roof pressure, particularly in working thin seams, it is often necessary to advance the working face at an angle with the face cleats of the coal. At times, again, the best results are obtained when the

coal is worked "end on," the face being then parallel to the butt cleats or "joints" of the coal.

When opening out a longwall face at the shaft bottom, or at the boundary of the shaft pillar; or, in the retreating system, at the boundary lines of the property; a considerable area must be worked out with great care and watchfulness, in order to observe the first signs of the weighting of the roof on the coal face. This may not take place, however, before the face has advanced 60 or 80 yd. In the meantime, the greatest care must

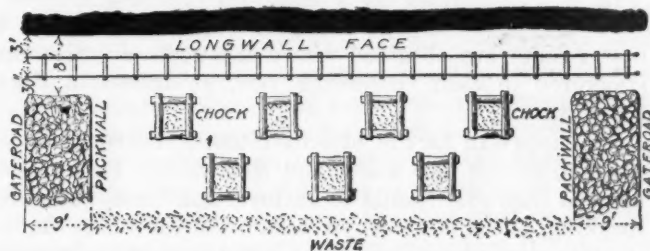


FIG. 2. USE OF CRIBS OR CHOCKS ON A LONGWALL FACE

be observed in the building of the packwalls and timbering the roof at the face.

In Fig. 1 is shown a section of a longwall face where three gateroads or "gates" lead from the main level to the working face. There a track or conveyor is laid along the face to transport the coal to the head of each gate by which it is taken to the main level to be then hauled out of the mine.

As shown in this figure, all the roads including the main level are kept open by building roadpacks on each side of the road. Other gobpacks are shown built in the waste. The distribution of such gobpacks must be determined by conditions in the roof and floor of the seam. The distance apart of the gateroads will likewise depend on conditions in the seam. A conveyor face will often be 100 yd. in length.

All packwalls, particularly roadpacks, must be well built. These will vary from 10 to 15 ft. in width. They may be continuous or built at regular intervals apart, depending on conditions at the face. The stone for building packwalls is generally taken from the roof on the roads when it is necessary to rip the roof, in order to obtain the required headroom for the cars.

HEAVY ROOF PRESSURE REQUIRES THE USE OF CRIBS

Where the roof pressure is great or the building material weak, "cribs" formed of old timbers are built at intervals in the packs to strengthen them. It is important to build substantial cribs at each corner of a gateroad to insure the road being kept open at such points.

In Fig. 2 is shown a section of a longwall face where cribs are used to control the roof pressure in place of post timbering. As indicated in this figure, the cribs are built four square, at regular intervals apart. The timbers are laid up in log-cabin fashion, the inner face being filled with refuse. In order to facilitate the re-

removal of the crib as the face is advanced, the lower logs are laid on a mound of dirt that can be mined with a pick when the crib is to be removed.

Whether the roof is supported by posts or cribs, the purpose is to so control the pressure on the coal face that it shall be sufficient to bring down the coal without causing a fracture in the roof. As the face is advanced, it is necessary to draw the rear timbers after setting a new row of posts or cribs at the face.

In Fig. 3 is shown a stepped longwall face, where each section is 300 ft. in length and has a conveyor to transport the coal to the head of the gateroad. In this figure three rows of posts are shown at the face. The



FIG. 3. CONVEYORS ON A STEPPED LONGWALL FACE

best results are obtained where the posts or cribs are staggered in each succeeding row, as shown in Figs. 2 and 3.

As a longwall face is advanced, the overburden settles down firmly on the waste and packwalls. This settlement of the roof should be uniform and cease, generally speaking, about 60 or 80 yd. back from the face. Outby of this point there is usually little trouble or expense required to keep the roads in good condition. As previously stated, the chief aim in longwall work is to utilize the leverage of the roof pressure to break down the coal, while preventing the fracture of the roof, which would mean disaster and much expense to recover the face.

WILLIAM DICKINSON, SR.

Oak Hill, W. Va.

Example of a Practical Skilled Miner

It does not always happen that the practical skilled miner is a man of long experience in mining, as is clearly shown in the instance here cited.

SPEAKING of what constitutes a practical skilled miner, as suggested in the letter of W. M. Chambers, *Coal Age*, Sept. 2, p. 496, I find it is not always true that such a one has been long in the mining game and gained experience by years of toil under varying conditions.

Upon a recent visit to a mine, in company with the foreman, I entered a miner's place that was more orderly kept and better timbered than it has ever been my pleasure to behold. Neither the foreman nor myself could make a single suggestion that would be of value.

Every post was in line, stood plumb and had a well balanced cap between it and the roof. Tools not in use were put out of the way in a breakthrough. The man had drilled six holes about eight inches deep in the rib, inside of the breakthrough; and in each hole was a stick of permissible explosive, while his detonators were in another hole five feet away. All the holes were ten feet from his tool box.

There was no carbide spilled about the box, and coat and watch hung on a post close by within easy reach. The miner himself was busy loading a car. It stood on a slight grade and had a sprag in each rear wheel and the brake set.

Upon our approach, the miner stopped work and, holding one hand against the roof sounded the slate with

his pick, to assure us and himself that it was safe. A few questions elicited the fact that he had never had a car off the track. My surprise at this was less when I learned he had only been a miner twenty-seven days. The boss explained his success as a miner by saying he was teachable, adding that he would make a better miner in thirty days than many men in as many years.

Pikeville, Ky.

G. E. DAUGHERTY.

Longwall System for Low Coal

Conditions permitting, undoubtedly the longwall system of mining is best adapted for the working of low coal; but the success of this method depends wholly on the experience of the men employed.

EVERY practical mining man is aware that, in the majority of instances, the thicker seams of coal are being rapidly worked out, while the thinner seams are being left to be mined at some later day when the larger deposits have been practically exhausted. Having regard to the best interests of any mining concern, in respect to its future welfare, it is more logical to think that the thinner seams should be worked in conjunction with those that are thicker.

In seeking to ascertain the best method to adopt in the further development of a mine already opened in a 32- to 35-in. seam, L. E. R. has presented a question that should interest many. The inquiry appeared in *Coal Age*, Aug. 19, p. 403, and in reply the editor has rightly suggested the adoption of the longwall system of mining and drawn attention to the particular advantages of that system in the working of low coal.

EXACT INFORMATION NEEDED

The information given by the inquirer, however, is so meager that it would be foolish for one to attempt to make a definite statement regarding the best and most profitable system of working in that particular field. The only way to decide that matter is to have an inspection made by a competent man who has had experience in the working of coal by the longwall and room-and-pillar systems, under varying conditions.

As has been stated in the reply to this inquiry, without an accurate knowledge of all the conditions it is only possible to suggest what would seem to be the most suitable method to adopt owing to the thinness of the seam, which makes the complete extraction of the coal of prime importance, and in this regard the longwall system of mining has the advantage.

Before going further let me give, here, a word of warning. It is of the utmost importance, in adopting the longwall method of working, to secure a thoroughly reliable and competent man who has had experience in that system. He must have a good practical knowledge of what is required in opening a longwall face and maintaining the roads.

Very much depends on understanding the movement of the overburden and keeping a proper control of the roof pressure so that it shall be just sufficient to bring down the coal. One must understand exactly how to handle the work and know what means to employ to insure success. Without this knowledge and experience the undertaking is likely to prove an expensive experiment for the company.

When longwall work is properly conducted, the system has the following advantages: 1. Complete extraction of the coal. 2. Concentration of the work in a

continuous coal face. 3. Cheaper and better ventilation of the working face. 4. A minimum length of haul underground. 5. Minimum expenditure for rails, ties and maintenance of roads. 6. Less expense for brattices, repairing stoppings, timbering air-courses and cleaning up roof falls. 7. Little or no damage to the surface in the extraction of the coal.

Finally, let me say that if the longwall system can be employed in this case, the mine will take on a new lease of life, and soon show a balance on the right side of the ledger account. In the present room-and-pillar system, there is roof to be brushed or floor to be lifted and other deadwork that is only offset by a small tonnage. If that system is to be continued, I agree with the suggestion made by the editor that the main headings should be driven three or four abreast. I much prefer four main headings to provide an intake and return airway, haulage road and traveling road, separately. This is in the interest of the safety and future development of the mine.

McKeesport, Pa.

ANDREW O. BAIN.

Classifying the Working Places and Grouping the Men

Miners should be distributed according to their individual producing capacities, after a careful study of the varying conditions in the mine.

DISCUSSING the important question of distributing men of different producing qualities in such a manner as to maintain a uniform output of coal, it must be acknowledged that there are good and bad methods of doing this. It requires not only a wide familiarity with the men but a close study of the conditions in the mine in order to insure the best results.

In regard to making a proper distribution of the men, in a mine where the conditions vary widely, many will contend that it cannot be done with justice and fairness to all and, at the same time, maintain a uniform daily tonnage. Others will claim with equal assurance that it is possible.

In my opinion, it is necessary to group the men employed in a mine, with respect to their individual capacities for producing coal. Then, make a careful study of the conditions in the mine and classify the working places with respect to the ease with which the coal can be mined, the distance from the shaft bottom and the haulage requirements, and make the distribution accordingly.

Every foreman knows that there are widely varying qualities among miners. There are the steady workers, some of whom are good producers and others not so good. There are married men, single men, young men, old men and those who are feeble or crippled in the service. There is the miner who works but half the time and the habitual drinker who is sure to be away at the time when he is most needed. I am not inclined to give the kind of man last named much consideration. In fairness to the operator and the man's fellow miners, the habitual drinker should be relegated to the worst place in the mine.

In respect to the conditions prevailing in mines, the practical foreman who is anxious to secure a maximum recovery of coal would not think of placing an unsteady worker or an old, feeble or crippled miner on pillar-work, where it is of the utmost importance to employ the most steady and practical men. Any irregularity

in the progress of this class of work can only result in trouble and the loss of much coal.

In roomwork it is often of the same vital importance that the working faces in each room shall be advanced regularly at a uniform pace. This is necessary because when drawing back the pillars in those rooms good results can only be obtained by keeping a uniformly straight line on the faces of the pillars. Also, good ventilation at the face of each room requires a uniform advance, in order to enable the breakthroughs to be made at the proper time and place. These considerations appear to argue against placing miners of good and bad producing qualities on the same line of work.

FOREMAN MUST USE JUDGMENT AND TACT IN THE DISTRIBUTION OF HIS MEN

In my experience, failure has resulted many times and much coal has been lost where an unequal assortment of men have been employed in the same section. It has frequently happened that good workers have been compelled to lay off until the fellow working the next place has caught up; or they must be transferred for a time to another place or be employed on company work.

Of course, it is common for the miner to believe and claim that the foreman is discriminating against him when he is given a place where the coal is low or hard to mine, or there are slips or faults that must be guarded against. He knows there are better places in the mine and thinks he is being treated unfairly, unless the foreman can use rare judgment and tact.

In a mine where all or most all of the places are equally good the question of distributing men gives little trouble. In other mines there will be sections where it is possible to group the good, steady workers so as to maintain a uniform pace throughout the section. In another section of the same mine it may be possible to group workers who are steady but less active and produce less coal. Here, also, the working faces may advance at about the same uniform pace, but the section will produce a less tonnage per man than in that first named. The unsteady or irregular workers must be assigned to places where the work is of less importance and their habits give less trouble.

One of the greatest handicaps to a mine foreman is his friends. Especially is this true where he must consider a maximum recovery of coal and uniform production, and has a natural disposition to treat every one alike. In order to maintain the required tonnage each driver and motorman must find a full trip waiting for him at the inby end of his haul. To accomplish this there must be a sufficient number of working places and a few extra ones, in order to produce the required amount of coal at all times. Only in this way can the coal be kept moving from the working face to the shaft or slope bottom.

Finally, in mines where the conditions vary, my practice is to give the married men who are steady workers and good producers the first consideration. Single men of this class come next and the old, feeble and crippled men next, following these with the unsteady workers and lastly those given to drink. My belief is that we owe it to the industry to give the steady workers and good producers the first choice. Moreover, it is the only way open to a mine foreman to enable him to hold his best men and maintain the daily output of the mine. It is the premium to be placed on steady and good work.

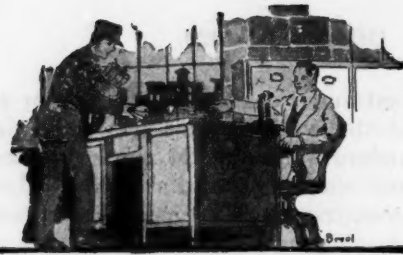
Thomas, W. Va.

W. H. NOONE.



Inquiries of General Interest

Answered by
James T. Beard



Weight and Volume of Legal Bushel of Coal in Pennsylvania

The efforts of Congress (1836) to establish a uniform system of weights and measures in this country was only partially successful. The values of the fundamental standards, pound, yard, gallon, and bushel, adopted by the Federal Government, were generally accepted by the several states, with the exception of the last two standards mentioned. But many of the states established arbitrary values for the gallon and bushel, for different commodities.

THERE has always been a feeling of discontent among the miners of the Connellsville region regarding the measurement of their coal in bushels, which forms the basis of computing their earnings. In several instances, miners have measured their coal with a regular bushel basket, as a means of verifying the estimated capacity of the mine cars as stated by the officials of the company. It is unnecessary to say that these two estimates varied widely.

Webster's Unabridged Dictionary defines the bushel as containing 2,150.42 cu.in. Taking this value as a basis, I measured a mine car supposed to hold forty bushels of coal and found its capacity was over forty-nine bushels. The fireboss told me that a bushel of coal should weigh 75 or 80 lb. The mine foreman claimed the weight of a bushel was 80 lb., but said its volume was about five pecks, which would make it over 2,600 cu.in. This estimate would reduce my 49 bushels to about the 40 bushels claimed by the company as the capacity of the car. Please state the correct volume of a bushel of Connellsville coal and its weight in pounds.

Latrobe Pa.

A MINER.

Owing to the confusion in Custom Houses, the Federal Government ordered an investigation of the weights and measures in common use (1830). A few years later (1836) Congress directed the Secretary of the Treasury to deliver a complete set of the Standards of Weights and Measures adopted, to the governor of each state, with the result that the value of the pounds and yards are uniform in all the states. For various reasons, however, many states adopted their own values for the gallon and the bushel, for different commodities; and the true basis of comparison is, therefore, by weight.

For example, the legal weight of a bushel of bituminous coal adopted by the Federal Government is eighty pounds, which is also the legal weight for that commodity in Ohio and West Virginia, while Pennsylvania and Kentucky have made the legal bushel of bituminous coal to be seventy-six pounds in those states.

By act of the Pennsylvania Legislature, on and after January 1, 1850, the standard bushel for the measurement of bituminous coal in that state was made 2,688 cu.in., even measure, which was not, however, to affect previous contracts still in force. The act was made immediately operative in the county of Allegheny.

The select councils of the cities of Pittsburgh and

Allegheny and the incorporated boroughs within that county were authorized to establish a mode of ascertaining the weight of coal sold in the districts named. In May, 1852, the standard weight of coal in the borough of Greensburg, Westmoreland County, was made to be seventy-five pounds per bushel, and the town council of that borough was authorized to pass ordinances prohibiting the sale of coal otherwise than by the standard weight.

From the foregoing, it will be seen that there is considerable local variation in the legalized weight of coal, which is likewise true of other commodities. It is well known that, in Pennsylvania, the legal standard ton for anthracite coal is the long ton (2,240 lb.), while in Colorado the legal ton is the short ton (2,000 lb.).

Grate Area of a Mine Furnace

KINDLY give me a little information in regard to the size of grate required to produce a given circulation against a fixed water gage. The proposition that concerns me at the present time is the following:

A few years ago we were operating our mine under furnace ventilation. The furnace shaft was later abandoned and used as an upcast, only, for the circulation produced by a fan that we had installed at that time owing to the need of more air as the mine was developed. This fan has proved but a makeshift, however, and must now be replaced by a larger one to provide for the future development of the mine.

The present circulation is an air volume of 120,000 cu.ft. per min., under a water gage of 2 in. I want to ask what should be the size of grate required in the old furnace shaft, which is 300 ft. deep, in order to produce this same quantity of air. We desire to use the furnace temporarily while renewing the fan installation.

SUPERINTENDENT.

—, Ky.

Assuming a fairly dry shaft, a common rule for determining the grate area of a furnace, for any given circulation and depth of shaft, is the following:

Divide the product of the required volume of air (Q_m), expressed in thousands of cubic feet per minute, and the unit pressure (p), in pounds per square foot, by the square root of the depth of the shaft (D), in feet; and the quotient will be the required grate area (A), in square feet.

Applying this rule, the grate area required to produce a circulation of 120,000 cu.ft. per min., against a 2-in. water gage, which corresponds to a unit pressure of $2 \times 5.2 = 10.4$ lb. per sq.ft., when the furnace shaft is 300 ft. deep, is

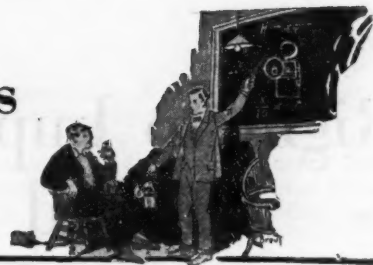
$$A = \frac{Q_m p}{\sqrt{D}} = \frac{120 \times 10.4}{300} = 72 \text{ sq.ft.}$$

The size of grate required in this case is, therefore, 8 x 9 ft., which may be assumed to burn 12 lb. of bituminous coal, per square foot of grate surface, per hour, or $12 \times 72 = 864$ lb. per hr.



Examination Questions

Answered by
James T. Beard



Miscellaneous Questions

(Answered by Request)

QUESTION—The rubbing surface of a square airway is 130,000 sq.ft.; the length of the airway is 5,000 ft.; what is the perimeter of the airway?

ANSWER—Since the rubbing surface of an airway is always equal to the product of its length and perimeter, the latter is found by dividing the rubbing surface, in square feet, by the length of the airway, in feet, which gives in this case $130,000 \div 5,000 = 26$ ft. This airway being square, the length of each side is $26 \div 4 = 6\frac{1}{2}$ ft., or 6 ft. 3 in.

QUESTION—If the ventilation of a mine is insufficient how may it be increased without increasing the power?

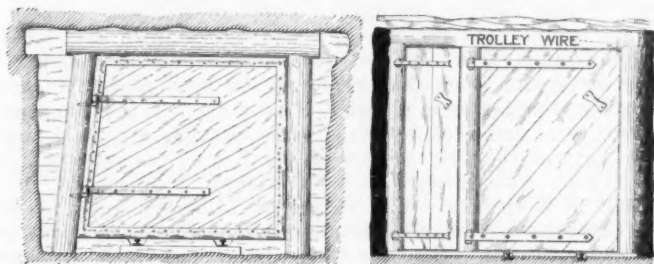
ANSWER—By cleaning up and removing all obstructions in the airways, enlarging all breakthroughs and crosscuts, and shortening the distance the air must travel; also, by splitting the air wherever this is practicable. By these means the mine resistance and pressure are reduced and the volume of air circulated by the same power is increased.

QUESTION—What is the purpose of stoppings, and what material would you use in their construction in mines in this district?

ANSWER—The purpose of stoppings is to close the openings in which they are built and thus prevent the passage of air through them. Stoppings are built in the crosscuts between the intake and return of a pair of headings to deflect the air to the face and prevent its short-circuiting at such points. Stoppings are also built in openings to close off an abandoned place or to seal off a fire started in a place or section of the mine.

QUESTION—State how you would build and erect a trapdoor in a coal mine.

ANSWER—In the accompanying figure are shown two forms of trapdoors commonly built in mines. The door



TWO KINDS OF MINE TRAPDOORS

shown on the left is hung so as to give it a good fall that will prevent its standing open except when propped back. The door is shown as having a canvas flap nailed around its edge to prevent the leakage of air through the door when it is closed. The door shown on the right is a convenient form to employ where it is necessary to have a door on haulage road in motor haulage. On the side opposite to the trolley wire is shown a small door closing the manhole at the side of the road.

QUESTION—A volume of 87,450 cu.ft. per min. is moving in a mine under a 1-in. water gage. If a fall occurs in the main return airway, reducing the equivalent orifice of the mine to one-half what it was previously, how will that affect the quantity of air passing and the water gage? Show by calculation.

ANSWER—Assuming that the power on the air or the power producing the circulation remains constant, the quantity of air in circulation will vary inversely as the pressure or water gage. But, the equivalent orifice varies directly as the quantity and inversely as the square root of the water gage. From that it follows that the equivalent orifice of a mine varies as the expression $q \sqrt{q}$ or $\sqrt{q^3}$, or the cube of the quantity of air in circulation varies as the square of the equivalent orifice of the mine or airway. In other words, the cube of the quantity ratio is equal to the square of the orifice ratio which in this case is 1:2 or $\frac{1}{2}$; and we have for the new quantity:

$$\left(\frac{q}{87,450}\right)^3 = \left(\frac{1}{2}\right)^2 = \frac{1}{4};$$

$$q = \frac{87,450}{\sqrt[3]{\frac{1}{4}}} = 55,090 \text{ cu.ft. per min.}$$

Again, since for a constant power on the air, the quantity varies inversely as the pressure or water gage, the water gage ratio is equal to the inverse quantity ratio. Therefore, calling the resulting water gage x we have:

$$\frac{x}{1} = \frac{87,450}{55,090}; \text{ and } x = 1.58 \text{ in.}$$

To prove these results, find the equivalent orifice (A), in each case; thus:

$$A = (0.0004 \times 87,450) \div \sqrt{1} = 35 \text{ sq.ft.}$$

$$A = (0.0004 \times 55,090) \div \sqrt{1.58} = 17.5 \text{ sq.ft.}$$

The equivalent orifice in the second case is, therefore, one-half that of its previous value.

QUESTION—(a) Of what is coal dust composed? (b) Does coal dust give explosive properties to the air when suspended in an air current? (c) When are explosions of coal dust more likely to occur?

ANSWER—(a) Coal dust is the finely pulverized coal that results from mining and handling the product.

(b) When held in suspension in air and acted on by flame of sufficient volume and intensity the combustion of the dust is so rapid that it assumes explosive proportions, and air thus charged with coal dust in suspension is said to be explosive.

(c) Explosions from coal dust are most likely to occur in the mining of a highly inflammable coal by machines, particularly if the mine is generating some gas and proper precautions are not taken to load out the dust and prevent its suspension in the air of the mine.

Right to Impose Conditions of Employment Stressed in Old Dominion Ry. Case

To Labor or Not to Labor Declared To Be Inherent Privilege of the Individual—Jurist Upholds Road's Right to Discharge Employees for Joining Labor Union—Precedent of Highest Tribunal Cited

IN DENYING the application of Local 418 of the Brotherhood of Trainmen for an injunction to restrain the Washington & Old Dominion Ry. from discharging employees who joined the union, Justice Siddons, of the Supreme Court of the District of Columbia, in his decision rendered Sept. 3, cited a ruling of the U. S. Supreme Court (*Coal Age*, Sept. 23, p. 651). The Court held that while the right to labor or to remain idle was an inherent privilege of the workman, as a corollary the employer had the right to impose conditions upon those entering its employ, under which ruling the road was within its rights in discharging employees if they joined the brotherhood.

The suit was brought by a number of employees and former employees of the railroad company in their own right and as members of the Brotherhood of Railroad Trainmen, R. E. Lee Local 418, of Alexandria, Va., seeking an order to enjoin the defendant company from discharging them from its employ because of their affiliation with the brotherhood, the injunction to continue pending a decision by the Labor Board. The plaintiffs contended that the Labor Board had jurisdiction under the Transportation Act and sought, pending its decision, reinstatement of employees discharged because of membership in the labor union.

In view of the fact that some of the company's employees had stated that in any controversy between the railway and employees belonging to the union or between the road and the union itself the employees would stand by the union, it became the policy of the road to prevent its employees from joining labor unions.

UNION DEMANDS FORESHADOWED A STRIKE

It appearing that the employees who became members of the union contemplated a demand for increases in wages beyond—in the opinion of road's general manager—the ability of the company to meet, and in the event of failure to obtain such increases proposed ordering a strike, with consequent interruption of transportation of passengers, freight and mails, Justice Siddons considered the case of importance to the employees and the traveling and shipping public. After carefully weighing the merits of the plaintiffs' claim to consideration Justice Siddons ruled as follows:

... The right of employees to organize in what are popularly called unions is definitely recognized by the law, as it has received, from time to time, judicial affirmation and recognition. The right to strike, that is, the right by concerted action to withdraw from a given employment in the absence of contracts for employment for a definite period of time, is also recognized by the law and judicial authority. Strikes that are conducted in an orderly manner and do not involve a violation of property rights, or the production of public disorder, are but the exercise of a right not to work. The right to labor is a personal right which inheres in the individual, and, as a corollary to that, the right not to work must equally be recognized. But with the recognition of these rights, that, is the right to belong

to organizations of labor unions, so-called, there is another right which belongs to the employer, and that right is one to impose conditions upon those who seek employment from a given employer, be that employer an individual or a corporation. The right of employees to organize themselves into a union, or to become members of an existing union, has by both the Federal and State Legislatures attempted to be given such a sanction as would prevent employers from interfering with the free exercise of this right on the part of their employees. A conspicuous example of such an attempt by the Federal Legislature is illustrated in the case of *Adair vs. United States* (208 U. S., page 161). By the Act of Congress approved June 1, 1898 (30 Stat. 424), it is enacted by section 10 of that Act: "That any employer subject to the provisions of this act, and any officer, agent, or receiver of such employer, who shall require any employee, or any person seeking employment, as a condition of such employment, to enter into an agreement, either written or verbal, not to become or remain a member of any labor corporation, association, or organization; or shall threaten any employee with loss of employment, or shall unjustly discriminate against any employee because of his membership in such a labor corporation, association, or organization . . . is hereby declared to be guilty of a misdemeanor, and, upon conviction thereof in any court of the United States of competent jurisdiction in the district in which such offense was committed, shall be punished for each offense by a fine of not less than one hundred dollars and not more than one thousand dollars."

UNCONSTITUTIONAL ACT QUOTED IN CONVICTING

Adair was the master mechanic of the Louisville & Nashville Railroad Co., which was a common carrier of interstate commerce and an employer within the meaning of the Act of Congress mentioned, and one Coppage, being at the time an employee of said common carrier, was a member of a labor organization then known as the Order of Locomotive Firemen, and, being such, Adair, under authority of said carrier, discharged Coppage from his employment by the road because of his membership in said labor organization. For this act Adair was indicted, convicted and fined, and from that action of the trial court the case reached the Supreme Court. The opinion of the Supreme Court was delivered by Mr. Justice Harlan and held that the part of the 10th section of the Act of Congress which had been quoted was unconstitutional, because, say the Court, it is an invasion of the personal liberty, as well as of the right of property guaranteed by the 5th amendment to the Constitution. Said the Court (page 172): "It was the right of the defendant (Adair) to prescribe the terms upon which the services of Coppage would be accepted, and it was the right of Coppage to become or not, as he chose, an employee of the railroad company upon the terms offered to him. Mr. Cooley, in his treatise on torts, page 278, well says: 'It is a part of every man's civil rights that he be left at liberty to refuse business relations with any person whomsoever, whether the refusal rests upon reason or is the result of whim, caprice, prejudice or malice. With his reasons neither the public nor third persons have any legal concern. It is also his right to have business relations with anyone with whom he can make contracts, and, if he is wrongfully deprived of this right by others, he is entitled to redress.'" Again, at page 174, the Court say: "While, as already suggested, the rights of liberty and property guaranteed by the Constitution against deprivation with-

out due process of law is subject to such reasonable restraints as the common good or the general welfare may require, it is not within the functions of government—at least in the absence of contract between the parties—to compel any person, in the course of his business and against his will, to accept or retain the personal services of another, or to compel any person, against his will, to perform personal services for another." Still further, say the Court, at page 175: "It was the legal right of the defendant, Adair—however unwise such a course might have been—to discharge Coppage because of his being a member of a labor organization, as it was the legal right of Coppage, if he saw fit to do so—however unwise such a course on his part might have been—to quit the service in which he was engaged, because the defendant employed some persons who were not members of a labor organization. In all such particulars the employer and the employee have equality of right, and any legislation that disturbs that equality is an arbitrary interference with the liberty of contract which no government can legally justify in a free land."

The Court, of course, recognized exceptions to the general principles thus set forth in the case of contracts for employment which fix the period of service and prescribe the conditions upon which such a contract may be determined. Such contracts would control the rights of the parties as between themselves. There was a strong dissenting opinion in this case by Justices McKenna and Holmes, but in the later case of *Coppage vs. Kansas*, 236 U. S., page 1, the Court adhered to the principle of the doctrine announced in the *Adair* case, and there held that the statute of the State of Kansas as construed and applied by the highest State Court, which undertook to criminally punish an employer, or his agent, for having prescribed as a condition upon which one may secure employment under, or remain in service of such employer

(the employment being terminable at will), that the employee shall enter into an agreement not to become or remain a member of any labor organization, was unconstitutional, as infringing the rights of personal liberty and property without due process of law. In that case there was a dissenting opinion by Justices Holmes, Day and Hughes.

It may be asked what becomes of the right of employees to organize themselves into a union, or to become members of a union already in existence, if, as a consequence of doing so, the employer may exercise his right as recognized by the Supreme Court in the cases cited? The answer may not be easy to formulate, but this Court is not called upon to answer the question. Its duty is to give effect to the authoritative opinions and decisions of the Supreme tribunal. These, it would seem, give to the defendant railway company the right to dismiss its employees, if they join a labor union.

It is not for this Court to discuss the policy which from the evidence submitted is the one adopted by the defendant railway employer with respect to refusing that its employees may become members of a labor union. But it is well to keep in mind the evident policy of the National Legislature, which, impliedly at least, recognizes the right of employees to be members of a labor union.

In conclusion, the Court is of opinion that the defendant railway is such a carrier by railroad as comes within the purview of Title III of the Transportation Act of 1920. Its right to dismiss its employees for becoming members of the labor union is supported by the judgment of the highest judicial tribunal in the country, which judgment, in cases within the jurisdiction of this Court, this Court must recognize and enforce. It follows, therefore, that the application for an injunction as prayed by the plaintiffs must be denied and an order to this effect will be settled on notice.

Shortage Past, Coal Buyers Seek Quality and Reasonable Price, Wholesalers Report

At a meeting in Washington on Wednesday, Oct. 6, the Executive Committee of the American Wholesale Coal Association made a thorough canvass of the present coal situation. As a result it feels justified in advising the members of the association and the public generally on the following points:

The American people some months ago were of the opinion that there was danger of an impending shortage of bituminous coal. The satisfactory production since July 1 has proved the momentary alarm to have been unfounded.

Abnormally high prices were paid by consumers while they were animated by the fear of possibly impending famine. These prices are now placed wholly out of line by satisfactory production.

For a while many restraints were put upon distribution of bituminous coal, with the result that retail dealers were unable to fill urgent orders. Since the supply promises to be abundant there is no reason for continuing any such restrictions. Due allowance should be made by the public for the fact that this statement relates only to soft coal and for the further fact that retailers cannot do all of their normal winter business in a month or two. They have not and cannot get the equipment necessary for such a feat even if they could get the coal.

It is the opinion of the committee that a great change in the whole market situation is imminent. Therefore it suggests to buyers of bituminous coal who have a month's supply in storage that they confine purchases to immediate needs.

The committee is influenced in reaching this opinion

by developments which may be summarized as follows:

(1) C. E. Leshner, until recently statistician of the U. S. Geological Survey, has declared in a public statement that an average production of bituminous coal between Sept. 1 and Dec. 1, 1920, of 11,500,000 tons per week will meet all immediate needs and will supply a surplus of 40,000,000 tons of bituminous coal in the hands of the consumers.

(2) A report just issued by the Geological Survey shows a most satisfactory condition of stocks of bituminous coal now in the hands of users.

(3) Reports received from members of the American Wholesale Coal Association prove that many important users who recently had no storage of bituminous coal at all now have a supply sufficient for from six weeks to three months.

(4) Many well-informed buyers of bituminous coal who until recently were willing to take any quality, grade or size of coal at any price, are now quite particular as to quality, grade and size and are inclined to buy only if the price is satisfactory.

(5) In some few sections wholesalers were until recently able to sell all available bituminous coal practically without any effort on their part. The same concerns now report that sales are made with difficulty.

(6) In the Middle West prices recently have dropped, in some cases as much as \$2 a ton.

(7) The impending close of navigation on the Great Lakes will release to the general trade large quantities of coal. This will be offered for sale in a market which already shows signs of approaching saturation.

(8) Finally, the fear of a large increase in exports has been removed by clear proof that the docks on the Atlantic seaboard are incapable of transshipping any more coal than is now being handled by them.

Production of Pennsylvania Anthracite in 1919*

(In Gross Tons)

Region	Shipped	Local Sales	Mine Fuel	Total	Men Employed Underground	Surface	Total	Days Worked
Lehigh:								
Freshly mined coal.....	9,667,200	403,574	1,151,389	11,222,163	12,086	7,032	19,118	275
Washery product.....	627,198	2,701	46,563	676,462	198	198	198	176
Dredge product.....	67,207	.....	1,404	68,611	.....	44	44	155
	10,361,605	406,275	1,199,356	11,967,236	12,086	7,274	19,360	274
Schuylkill:								
Freshly mined coal.....	17,918,035	368,840	3,074,679	21,361,554	30,224	15,340	45,564	266
Washery product.....	1,081,891	86	200,749	1,282,726	.....	1,556	1,556	117
Dredge product.....	248,354	279,274	6,280	533,908	.....	415	415	173
	19,248,280	648,200	3,281,708	23,178,188	30,224	17,311	47,535	260
Wyoming:								
Freshly mined coal.....	36,694,081	1,031,398	3,443,843	41,169,322	65,087	20,980	86,067	268
Washery product.....	1,132,615	4,372	599,761	1,736,748	.....	868	868	173
Dredge product.....	8,128	8,742	548	17,418	.....	30	30	154
	37,834,824	1,044,512	4,044,152	42,923,488	65,087	21,878	86,965	267
Sullivan County:								
Freshly mined coal.....	372,575	8,810	51,634	433,019	564	262	826	263
Total freshly mined coal.....	64,651,891	1,812,622	7,721,545	74,186,058	107,961	43,614	151,575	268
Total washery product.....	2,841,704	7,159	847,073	3,695,936	.....	2,622	2,622	142
Total dredge product.....	323,689	288,016	8,232	619,937	.....	489	489	170
Grand total.....	67,817,284	2,107,797	8,576,850	78,501,931	107,961	46,725	154,686	266
Increases and decreases in 1919.....	-8,903,873	-280,095	-551,676	-9,735,644	+6,290	+1,275	+7,565	-27
	-11.6%	-11.7%	-6.0%	-11.0%	+6.2%	+2.8%	+5.1%	-9.2%

* Preliminary figures, prepared by F. G. Tryon. Subject to slight revision.

U. S. Army Coal Needs Contracted For; Three Months' Reserve Assured

CONTRACTS have been placed by the War Department covering 675,000 tons of bituminous coal and 350,000 tons of anthracite coal for army camps, posts and stations in the Eastern and Central sections of the country, at prices ranging from \$4.25 to \$8.50 for bituminous and \$7.25 to \$7.75 for the anthracite. There has been a marked increase in the price paid this year for the bituminous coal but not much change in the anthracite price. Last year the army purchased bituminous at about \$3.42 a ton and anthracite for from \$7 to \$7.50 a ton.

CONSIDERABLE VARIATION IN PRICE NOTED

Contracts for coal this year were placed on behalf of the War Department by Colonel J. P. Barney, chief of the raw materials and fuel division of the Quartermaster General's office, who made a trip through the East, South and Central West for this purpose. The colonel returned to Washington this week and was quite pleased with his success in procuring coal.

In the Eastern and Northeastern Departments of the army, embracing those portions of the country, the colonel placed orders for 275,000 tons of bituminous coal at \$8.50 a ton. For the Central Department he contracted for 200,000 tons at from \$7 to \$7.25 a ton and for the Southeastern Department 200,000 tons of bituminous at from \$4.25 to \$6.25 a ton. He also contracted for 350,000 tons of anthracite coal through Dr. E. W. Parker, director of the Anthracite Bureau of Information of Philadelphia, at prices rang-

ing from \$7.25 to \$7.75 per ton, dependent on the month in which delivered. The prices are f.o.b. mines. All bituminous coal is to be delivered in ten weeks from Sept. 18 and 70 per cent of the anthracite in ten weeks from Sept. 18.

Colonel Barney stated that, as far as he knew, every camp, post and station in the Eastern, Northeastern, Central and Southeastern Departments will thus have been provided with current coal needs for the year in addition to a three months' reserve, as ordered by the President and Secretary of War.

THE DEPARTMENT OF JUSTICE is preparing to enter prosecutions against anthracite coal profiteering. In a statement Attorney General Palmer said: "The Department of Justice has been busily engaged in gathering the facts in reference to the profits of coal producers in the anthracite region and will submit the facts to a grand jury on or about Oct. 18. Indications point very plainly to numerous violations of the Lever Law against profiteering in the anthracite field."

Railroads Make New Records in Loading And Delivery of Coal

IN AUGUST last the Pennsylvania system broke all previous records for the delivery of coal at New York harbor by dumping 527,010 gross tons at South Amboy. New records for the system have been made also in coal car loading. For bituminous coal the average load has been raised to 52.35 tons as compared with the previous high record of 50.9 tons. Anthracite loading per car has been

Anthracite Shipped in 1919, by Regions and Sizes*

(In gross tons) a

Size	Lehigh Region			Schuylkill Region			Wyoming Region			Sullivan County	Total	Per Cent of Total in 1918	Per Cent of Change in Size b
	Mines	Washeries	Dredges	Mines	Washeries	Dredges	Mines	Washeries	Dredges	Mines			
Lump.....	956	.....	.....	23,732	.....	.....	2,167	.....	.....	.....	26,855	.....	-79.8
Broken.....	344,407	592	.....	723,264	.....	.....	1,776,565	35	.....	16,748	2,861,611	4.2	-39.8
Egg.....	1,270,857	9,193	.....	2,360,418	5,809	.....	6,000,496	7,428	.....	36,951	9,691,152	14.3	-55.7
Stove.....	1,698,669	12,128	.....	3,310,554	7,408	.....	8,252,979	11,212	.....	53,379	13,346,329	19.7	0.6
Chestnut.....	2,407,612	127,458	.....	4,223,141	99,025	14	10,357,708	80,813	.....	76,917	17,372,688	25.6	0.2
Pea.....	1,031,703	57,810	1,407	1,995,143	143,182	83	2,812,545	130,723	.....	50,890	6,223,526	9.2	3.8
Buckwh't No. 1.....	1,485,358	91,325	7,394	2,999,664	332,222	2,900	4,514,899	350,480	260	.....	9,784,502	14.4	-9.4
Buckwh't No. 2.....	670,788	80,670	9,644	1,431,358	248,532	33,788	2,082,348	331,833	4,967	.....	4,893,928	7.2	-9.3
Buckwh't No. 3.....	425,283	240,057	48,762	750,999	215,033	127,815	473,662	91,816	2,765	.....	2,376,192	3.5	-52.7
Boiler.....	77,399	5,033	.....	13,669	9,605	56,955	281,018	51,102	.....	.....	494,781	0.8	-70.4
Other.....	254,168	2,932	.....	86,093	21,075	26,799	139,694	77,173	36	137,750	745,720	1.1	-45.1
Totals.....	9,667,200	627,198	67,207	17,918,035	1,081,891	248,345	36,694,081	1,132,615	8,128	372,575	67,817,284	100.0	-11.6

* Prepared by F. G. Tryon. (a) Subject to revision. (b) 1919 as compared with 1918; a minus sign indicates decrease.

raised to 47.15 tons as compared with the previous record of 45.75 tons.

Four months' improvement in coal transportation throughout the system is summarized in the following figures of carloads, issued by the Association of Railway Executives:

	To Tidewater Ports	To Lake Ports	Totals
May, 1920.....	11,300	3,912	15,212
June, 1920.....	13,312	6,823	20,185
July, 1920.....	14,397	11,361	25,758
August, 1920.....	20,099	21,750	41,849

Coal loaded at mines on the New York Central lines during August totaled 63,011 cars, an increase of 5,134 over the corresponding period of last year, and the heaviest loading of any month of the present year.

Bituminous Coal Production in Central Pennsylvania*

(In Net Tons)†

Period	1917	1918	1919	1920
January.....	5,103,621	4,637,131	5,114,716	4,390,827
February.....	4,351,331	4,666,093	3,148,078	3,635,195
March.....	5,260,725	5,318,134	3,482,408	5,002,992
April.....	4,497,326	5,084,292	3,404,602	4,254,075
May.....	4,840,767	5,214,803	3,649,957	4,105,668
June.....	5,044,325	5,393,048	3,831,680	4,404,480
July.....	4,851,237	5,590,414	4,386,820	4,705,956
August.....	5,139,502	5,702,102	4,832,219	4,947,492
September.....	4,716,933	5,104,013	4,865,074	5,162,333
Total nine months.....	43,805,767	46,710,030	36,715,554	40,609,018
Average monthly.....	4,867,307	5,190,003	4,079,506	4,512,113
October.....	5,311,568	5,265,562	5,580,692	
November.....	5,174,841	4,137,915	1,205,294	
December.....	4,366,641	4,401,611	3,044,841	
Total for year.....	58,658,817	60,515,118	46,546,381	
Average monthly.....	4,888,235	5,042,927	3,878,865	

* Figures supplied by Central Pennsylvania Coal Producers' Association.

† Includes boiler fuel, coal coked and local sales.

Coal Wholesalers Agree to Co-operate in Elimination of Resale Abuses

ACTIVITIES of the U. S. Department of Justice in delving into alleged violations of the Lever Act have precipitated such a situation in the coal industry that the Executive Committee of the American Wholesale Coal Association arranged a meeting in Washington with Attorney General A. Mitchell Palmer on Sept. 29, when the problems of the wholesalers were gone into at great length and Mr. Palmer considerably and frankly stated the Government's position, which, summed up briefly, is:

(1) To prosecute those who violate the Lever Law in selling coal.

(2) The department will look with favor upon efforts by dealers to eliminate the employment of repeated resales as a means of enhancing prices in violation of the Lever Act.

(3) To have the American Wholesale Coal Association exert its influence to eliminate any such practice.

How many times coal may be resold between the mines and the consumer is a moot question upon which the committee expressed no opinion. It is generally recognized, however, that conditions may arise where it will expediate and reduce the cost of distribution if two wholesalers participate in the sale of coal, but in other cases such dual resale may violate the law.

In an effort to conform to the policy of the Department of Justice and to meet the deep-rooted prejudice among governmental agencies generally against attaching repeated wholesale profits or gross margins to a consignment of coal, the Executive Committee of American Wholesale Coal Association promptly held a special meeting at which Abel I. Smith, of Stanchfield & Levy, and C. C. Carlin, attorneys for the association, were present in Washington, and the committee individually and as a whole are in hearty accord that where such objectionable practices exist they should be immediately discontinued.

The committee feels it is unwise for the members of the association to enter into any agreement to bring about the desired result, as it might be construed as a violation of the Sherman Anti-Trust Law, but it is the opinion of the committee that unless the members of the association participating in objectionable resales voluntarily abandon the practice, the Government will use every effort to vigorously prosecute.

Coal and Coke Exported During August

EXPORTS of coal and coke from the United States by countries and by customs districts and bunker coal supplied to vessels in the foreign trade at specified districts during August, 1920, as reported by the U. S. Bureau of Foreign and Domestic Commerce, were as follows (in gross tons):

DOMESTIC FUEL EXPORTS BY COUNTRIES

Countries	Anthracite	Bituminous	Coke
Azores and Madeira Is.....		2,114	
Belgium.....	1,001	32,503	2,781
Denmark.....	9,782	260,703	3,916
Finland.....		2,325	1,531
France.....	27,819	207,277	394
Greece.....	9,500	58,542	
Italy.....		129,546	
Netherlands.....	21,349	385,060	
Norway.....		148,743	110
Poland and Danzig.....			500
Portugal.....		16,001	
Russia in Europe.....		2,910	
Spain.....		1,613	371
Sweden.....	12,169	283,296	
Switzerland.....	87	54,520	1,053
Turkey in Europe.....	2,800	4,495	220
England.....		2,735	50
Scotland.....			336
Bermuda.....		3,913	
British Honduras.....		136	
Canada.....	465,973	1,867,006	40,859
Guatemala.....		50	
Honduras.....		3,629	
Nicaragua.....		91	
Mexico.....	604	17,773	13,521
Newfoundland and Labrador.....	70	5,584	
Barbados.....	25	8,441	
Jamaica.....		15,979	
Trinidad and Tobago.....		2,835	
Other British West Indies.....		218	
Cuba.....	1,519	123,610	5
Virgin Islands of U. S.....		7,988	
Dutch West Indies.....		456	
French West Indies.....			5
Haiti.....	2		
Dominican Republic.....			4
Argentina.....		182,740	2
Brazil.....	1,750	111,317	430
Chile.....	100	18,925	5,265
Colombia.....	50		10
Ecuador.....		1	
British Guiana.....		1,458	
Dutch Guiana.....		1,198	
Uruguay.....		30,039	
Venezuela.....			17
Aden.....		7,357	
Canary Islands.....		4,429	
French Africa.....		24,560	
Egypt.....		76,444	
Totals.....	555,627	4,108,561	71,381

EXPORTS BY CUSTOMS DISTRICTS

Maine and New Hampshire.....		68	81
Vermont.....	1,021	12,908	48
Massachusetts.....	65		
St. Lawrence.....	170,757	283,079	2,294
Rochester.....	96,347	89,288	
Buffalo.....	187,654	201,227	25,386
New York.....	70,930	35,250	6,285
Philadelphia.....	24,598	250,489	4,719
Maryland.....		561,694	3,445
Virginia.....		1,230,452	
South Carolina.....		50,889	
Georgia.....		11,792	
Florida.....		70,295	2,549
Mobile.....		12,531	
New Orleans.....		2,787	
San Antonio.....	296	214	117
El Paso.....	83	9,491	5,002
San Diego.....	2	39	
Arizona.....	221	3,955	8,084
San Francisco.....	2	19	318
Oregon.....		350	
Washington.....	1	946	2
Dakota.....	1,339	3,445	454
Duluth and Superior.....	678	1,610	120
Michigan.....	61	146,880	9,625
Ohio.....	1,572	1,128,859	2,851
Totals.....	555,627	4,108,561	71,381

BUNKER COAL

Districts	Tons
Maryland.....	97,256
New York.....	268,446
Philadelphia.....	59,552
Virginia.....	223,776

Indiana Commission Fixes Coal Prices

PRICES ranging from \$2.80 a ton to \$5.85 a ton, according to quality, for coal at the mines were fixed by the Indiana Special Coal and Food Commission created at the last special session of the state Legislature. The prices were set following a conference between Jesse E. Eschbach, chief examiner of the State Board of Accounts; Otto Klauss, auditor of State, and Governor James P. Goodrich, members of the commission.

The mining companies of the state were divided by the commission into four groups, according to the quality of coal mined and different prices were set for each group, as follows:

Group 1. Low cost mines: Mine-run, \$3 a ton; screenings, \$2.80; prepared sizes, \$3.25.

Group 2. Mine-run, \$3.20; screenings, \$3; prepared sizes, \$3.45.

Group 3. Mine-run, \$3.85; screenings, \$3.65; prepared sizes, \$4.10.

Group 4. Brazil Block: Mine-run, \$5.60; screenings, \$5.40; prepared sizes, \$5.85.

Seventy-eight operators and operating companies are in Group 1. They include the largest operations in the state and produce more than one-half of the state's tonnage. Group 2 is made up of ninety-six operators. Sixty are in Group 3 and four in Group 4, which is the block field.

The commission also provides that 15c. per ton may be added to the prices specified to take care of selling cost, which is taken to mean that in most if not in all cases the prices will be 15c. higher than those specified.

In issuing the order Mr. Eschbach made the statement that the prices fixed are for the present temporary

emergency only and that they may be changed at any time on the presentation of sufficient cause by coal companies.

The order of the commission follows:

Under and pursuant to authority vested in the Special Coal and Food Commission of Indiana by act of the General Assembly of Indiana, approved July 31, 1920, and after written notice to all licensed coal operators of the State of Indiana of a hearing fixed for Sept. 27, 1920, and after hearing on said date of all licensed coal operators desiring to be heard, and upon thorough investigation of the cost of mining coal by the respective licensees and as to the amount which constitutes a fairly reasonable profit upon the business of mining coal,

It is hereby ordered that the maximum price of coal, f.o.b. mines, for delivery in the State of Indiana for each of said licensees respectively shall be as follows, and that no coal from any of the said mines shall be sold by said licensees or any of them for delivery for use or consumption in the State of Indiana at a greater price per ton than herein fixed for the coal from any of said mines, respectively: [Here follows a list of several hundred coal mining companies divided into their respective groups, together with the price of each group].

It is further ordered that any operator who sells his or its coal to any consumer or to any retailer for delivery, use or consumption within the State of Indiana may add to the price above fixed for said coal not to exceed 15c. per ton to cover the selling cost thereof, and no licensee so selling coal direct to the consumer or retailer shall add to the selling price at the mine as above fixed, more than 15c. per ton to cover the selling cost of coal from said mine, except said licensee shall engage at its mine in local retail selling, in which case he may sell at the prices fixed for retailers.

This order shall be in full force and effect from and after Oct. 5, 1920, and until modified by the commission.

Pennsylvania Coal Cutter Earns at Rate of \$9,000 and Miners \$7,000 a Year

IN YOUR issue of Sept. 23 I note an item in which it is stated that Joseph Varga, a coal miner employed at the Marion mine of the West Penn By-Product Coal Co. of Mount Pleasant, Pa., earned \$245 in two weeks.

At our Hiyasota No. 1 mine, located on the Baltimore & Ohio R. R. at Jerome, Pa., we employ about eighty-five miners. I enclose a statement of the earnings of our twenty leading miners for a two weeks' pay. We have counted the total number of days in which all our miners appeared on our pay sheet, counting the men who only worked a few hours as working a full day.

STATEMENT OF EARNINGS AT HIYASOTA MINE NO. 1 Aug. 16-31, 1920

Miners			
Silvino Degosperi.....	\$268.60	Joe Plasky.....	339.92
Joe Lava.....	258.35	Frank Barbach.....	234.96
Guerino Bonassa.....	237.98	Andy Sustar.....	235.59
Frank Borath.....	243.88	Joe Iskar.....	215.14
Mike Bilog.....	202.00	Alex Scropel.....	261.04
Joe Bengo.....	220.45	Marianna Zambella..	228.37
Andy Kish.....	237.21	Joe Stemuts.....	275.60
Bill Fiddle.....	226.29	Zata Urtsky.....	202.07
Cutters and Scrapers			
Chas. Zambotti.....	\$351.33	George Susich.....	319.49
Adam Paviak.....	351.33	Jack Martinelli.....	311.42

This shows 978 working days, for which the miners were paid \$15,442, or an average of \$15.79 per day.

JNO. GIBSON, JR.,

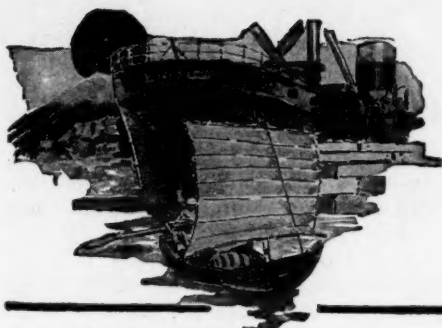
Treasurer Penn Smokeless Coal Co.

Union Bank Bldg., Pittsburgh, Pa.

Bituminous Coal Loaded Into Vessels at Lake Ports as Dumped by Docks for Season to End of September

(In Net Tons)

Ports	Railroads	1920			1919			1918		
		Cargo	Fuel	Total	Cargo	Fuel	Total	Cargo	Fuel	Total
Toledo.....	Hocking Valley.....	2,533,666	51,508	2,585,174	3,476,476	97,686	3,574,162	3,600,208	104,175	3,704,383
	Toledo & Ohio Central.....	1,155,803	44,646	1,200,449	1,030,810	31,539	1,062,349	1,598,691	43,616	1,642,307
	Baltimore & Ohio.....	933,093	28,423	961,516	1,886,659	44,918	1,931,577	2,137,270	43,525	2,180,795
Sandusky.....	Pennsylvania.....	1,066,276	15,015	1,081,291	1,102,597	30,193	1,132,790	1,764,408	44,241	1,808,649
Huron.....	Wheeling & Lake Erie.....	1,376,311	73,418	1,449,729	1,183,769	41,148	1,224,917	1,607,726	57,562	1,665,288
Lorain.....	Baltimore & Ohio.....	2,163,365	152,418	2,315,783	2,240,013	121,721	2,361,734	2,384,401	67,956	2,452,357
	Pennsylvania.....	752,653	115,458	868,111	1,773,256	198,259	1,971,515	1,905,061	224,242	2,129,303
Cleveland.....	Erie.....	243,997	14,116	258,113	189,235	5,598	194,833	487,351	16,129	503,480
Fairport.....	Baltimore & Ohio.....				16,692	12,954	29,646	149,325	34,126	183,451
Ashtabula.....	New York Central.....	988,367	196,637	1,185,004	1,384,993	118,556	1,503,549	1,535,289	164,163	1,699,452
	Pennsylvania.....	1,210,112	70,349	1,280,461	1,525,198	77,201	1,602,399	1,027,956	62,931	1,090,887
Conneaut.....	Bessemer & Lake Erie.....	1,797,497	30,624	1,828,121	1,105,605	7,108	1,112,713	1,734,580	25,455	1,760,035
	Pennsylvania—West.....	149,137	12,926	162,063	613,242	34,255	647,497	512,995	30,650	543,645
Erie.....	Pennsylvania—East.....	234,116	59,245	293,361	152,678	11,771	164,449	332,989	10,008	342,997
Totals.....		14,604,393	864,783	15,469,176	17,681,223	832,907	18,514,130	20,778,250	928,779	21,707,029



Foreign Markets and Export News



Belgian Coal Trade

It appears that Germany actually delivered 180,395 tons of fuel to Belgium, which exceeds the quantum of 180,000 tons laid down by the Spa agreement. Included in this total were 100,471 tons of Ruhr coal and 19,024 tons of brown coal from the Cologne district. During the first seven months of this year, Belgium imported 403,032 tons of coal, 102,504 tons of coke, and 27,289 tons of briquettes; exports in the same period included 833,935 tons of coal, 115,567 tons of coke, and 101,329 tons of briquettes. As compared with 1919, an additional 2,016,700 tons have been placed at the disposal of Belgian consumers. It is considered probable that the official prices of coal in Belgium will remain unchanged until the end of the present year.

French Coal Imports

During the first half of the present year, the imports of coal, coke, and briquettes into France were as follows:—

	1920 Tons	1919 Tons
Coal—		
United Kingdom.....	6,759,920	6,957,205
Belgium.....	572,194	314,165
United States of America.....	496,912	3,467
Germany.....	1,637,987	3,661
Other countries.....	47,825	
Totals.....	9,514,838	7,278,498
Coke—		
Belgium.....	64,909	13,258
United Kingdom.....	468,19	241,712
Germany.....	1,458,057	
Other countries.....	6,449	2,901
Totals.....	1,997,606	257,871
Briquettes—		
United Kingdom.....	449,415	300,198
Belgium.....	84,078	36,485
Germany.....	265,830	
Other countries.....	4,095	46
Totals.....	803,418	336,729

It will be seen that Germany supplied 3,850,000 tons of coal in the six months—taking the equivalent of coal in the coke supplied—as against 12,000,000 tons required under the Treaty terms.

German Coal Deliveries

The German Commissariat for the distribution of coal has published the following figures showing the deliveries of coal to France, Belgium, and Italy (the figures in parentheses show the quantities required under the Spa Convention): To France, 1,646,186 tons (1,640,000 tons); to Belgium, 180,395 tons (180,000 tons); to Italy, 152,064 tons (180,000 tons)—so that the stipulated quantities were supplied within about 21,000 tons. This shortage was due to the troubles in Upper Silesia, from which district the consignments

to Italy totalled 64,404 tons, as compared with 93,000 tons according to the agreement.

Good Demand for Chinese Coals; Japan Inquiry Is Low

According to the report of Wheelock & Co. issued Aug. 26 at Shanghai, the Japanese coal market was very quiet, and beyond some inquiry for lump from native sources little business was transacted. Some European calls for coal are continuing, but there is little chance of much trade developing, because of the high cost of Japan coal as compared with Chinese and also due to the high freight rates to Europe.

Fushun coal is more easily available for export and a fair amount of business is being done abroad.

Negotiations are still proceeding from various quarters for coal from China to Europe. Rumors of large contracts, however, lack confirmation.

Heavy demand for coal all over the East has strengthened the market for Kaiping coal. The price remains firm. Contract deliveries monopolize the tonnage and stocks are very low.

Coal prices are quoted as follows:

JAPAN COAL

Miike lump.....	ex wharf	} Contracted for
Miike small.....	ex wharf	
Miike dust.....	ex wharf	
Kishima lump.....	ex wharf	Taels
Kishima dust.....	ex wharf—no stock	14.00
Shakano lump.....	ex wharf	10.00
Arate lump.....	ex wharf	13.00
Shimoyamada Kirigomi.....	ex wharf	12.00
Shin Shakano.....	ex wharf	11.00
Yoshinotani No. 1 lump.....	ex wharf	11.00
Yoshinotani No. 2 lump.....	ex wharf	12.00
		10.00

KAIPING COAL

	Taels per Ton ex Wharf
No. 2 lump.....	13.50
Washed nuts.....	13.50
Washed slack.....	10.50
No. 1 slack.....	9.00
No. 2 slack.....	8.50

Jobbers' Margins in England

In a recent issue the *London Gas World* had an editorial on the subject of jobbers' profits as they affect the gas industry. In the article it was pointed out how collieries which formerly sold direct were appointing sales agents—who, of course, took a factoring profit. There is no doubt, according to the *Journal of Commerce*, that far too large a proportion of coal in Great Britain is passing through the hands of middlemen, business that could be done direct between the colliery and the consumer without any difficulty, and the commissions saved to the consumer.

Ever since control came into operation everything has been favorable to

the middlemen. In the first place where a tonnage was allocated it had to be sold through the same source. Whereas in pre-war days, when there was competition for business, a jobbers' profit was only 3d. per ton, he is now entitled to charge from 1s. to 1s. 6d., according to the particular class of business. On top of the present high pit prices this is held to be a serious consideration, and it is understood the attention of the Coal Mines Department has been called to the latter margin of profit as being unreasonable.

In the report issued by Mr. Justice Sankey on March 22, 1919, it was suggested that the "Elimination of unnecessary distribution costs" should be the subject of an inquiry.

As Wages Expand Coal Output Shrinks in Great Britain

There has been a reduction in the output of coal per person in Great Britain with every advance in mine workers' wages that has been given since 1914, according to the *Liverpool Journal of Commerce*. The first was in May, 1915, after which they have followed with almost periodic frequency. It will perhaps be interesting to give particulars of outputs since 1914, which are as follows:

	Gross Tons Raised (Millions)	No. of Persons Employed	Output per Person Employed
1914.....	265.7	1,034,105	252
1915.....	253.2	939,604	270
1916.....	256.6	984,796	260
1917.....	248.5	1,006,299	247
1918.....	227.7	1,008,867	232
1919.....	229.7	1,163,000	197½
First half of 1920.....	120.2		102.43

The output per person employed for the year 1914 is low on account of the fact that for several months pits were working short time, but since the coal shortage, which, after the commencement of the war first became evidenced in January, 1915, pits have worked practically full time, and the comparisons up to 1918 are on a true basis.

As from July 16, 1919, working hours were reduced from eight to seven per shift, but, calculated on the basis for eight-hour shifts for the whole of the year, the output per person would be approximately 210 tons. So that between 1915 and last year, the annual output per total persons employed had on the published figures been reduced by 60 tons. As a matter of fact, however, during 1919—owing to the six weeks Yorkshire County and various other strikes—there was a considerable loss in output, which obviously affects the output per person employed.

Movement of Coal and Coke by Fourteen Leading Railroads During June and First Six Months of 1920

(Compiled by the U. S. Bureau of Foreign and Domestic Commerce)

SHIPMENTS DURING JUNE

Classes and Railroads For Revenue Only	—Originating— on Line		Received from Connections		Totals	
	1919 Net Tons	1920 Net Tons	1919 Net Tons	1920 Net Tons	1919 Net Tons	1920 Net Tons
Bituminous:						
Baltimore & Ohio	2,902,763	3,259,320	1,188,859	938,232	4,091,622	4,197,552
Buffalo, Rochester & Pittsburgh	376,632	757,719	18,184	13,741	394,816	771,500
Chesapeake & Ohio	2,301,750	1,801,964	167,087	254,305	2,468,837	2,056,269
Erie	25,693	74,822	493,253	858,320	518,946	933,142
Huntingdon & Broad Top Mountain	64,989	73,462	1,375	41,582	66,364	115,044
New York Central (Buffalo and east)	585,967	761,545			585,967	761,545
Norfolk & Western	1,544,968	1,641,429	158,516	284,607	1,703,484	1,926,036
Pittsburgh & Lake Erie	549,385	379,849	558,847	402,540	1,108,232	782,389
Pittsburgh & Shawmut	158,861	211,116			158,861	211,116
Pittsburgh, Shawmut & Northern	30,595	66,255	23,539	22,604	54,134	88,859
Virginian	436,013	530,404	69,128	60,331	505,141	590,735
Western Maryland	311,233	364,413	618,972	310,061	930,205	674,474
Totals	9,288,849	9,922,338	3,297,760	3,186,323	12,586,709	13,108,661
For Company Fuel						
Bituminous:						
Baltimore & Ohio	360,265	490,512	48,634	28,083	408,899	518,595
Buffalo, Rochester & Pittsburgh	41,834	65,276			41,834	65,276
Chesapeake & Ohio	152,567	215,157			152,567	215,157
Erie	105,871	113,992	141,621	149,794	247,492	263,786
Huntingdon & Broad Top Mountain	221	2,989			221	2,989
New York Central (Buffalo and east)	127,787	97,952			127,787	97,952
Norfolk & Western	128,931	211,179	31,903	37,683	160,834	248,862
Pittsburgh & Lake Erie	14,361	31,906	17,137	6,531	31,498	37,437
Pittsburgh & Shawmut	2,211	3,135			2,211	3,135
Pittsburgh, Shawmut & Northern	2,580	3,769			2,580	3,769
Virginian	27,642	42,199	105	149	27,747	42,348
Western Maryland	33,193	45,606	4,870	1,141	38,063	46,747
Totals	997,463	1,323,672	244,270	223,381	1,241,733	1,546,053
Coke for Revenue and Fuel						
Baltimore & Ohio	62,934	172,734	71,750	77,178	134,684	249,912
Buffalo, Rochester & Pittsburgh	10,690	17,453	19,764	32,700	30,454	50,153
Chesapeake & Ohio	48,268	45,243	137	12,080	48,405	57,323
Erie	5,021	21,226	13,935	50,309	18,956	71,535
Huntingdon & Broad Top Mountain	7,483	5,595		2,550	7,483	8,145
Norfolk & Western	41,339	89,191	5,742	23,340	47,081	112,531
Pittsburgh & Lake Erie	14,922	33,312	227,963	205,024	242,885	238,336
Western Maryland	3,645	3,422	15,711	5,679	19,356	9,101
Totals	194,302	388,176	355,002	408,860	549,304	797,036

SHIPMENTS FOR SIX MONTHS ENDING JUNE

For Revenue Only						
Bituminous:						
Baltimore & Ohio	14,256,531	18,084,440	4,613,657	5,968,369	18,870,188	24,052,809
Buffalo, Rochester & Pittsburgh	2,646,987	4,206,545	203,579	87,194	2,850,566	4,293,739
Chesapeake & Ohio	10,220,772	11,803,728	1,063,975	1,260,856	11,284,747	13,064,584
Erie	149,675	269,075	3,180,345	5,360,071	3,530,020	5,620,146
Huntingdon & Broad Top Mountain	345,663	433,488	6,047	86,287	351,710	519,775
New York Central (Buffalo and east)	2,969,109	4,367,368			2,969,109	4,367,368
Norfolk & Western	9,134,411	9,488,563	1,178,933	1,494,555	10,313,344	10,983,118
Pittsburgh & Lake Erie	2,726,644	2,220,466	2,998,498	2,669,689	5,725,142	4,890,155
Pittsburgh & Shawmut	903,701	1,329,238			903,701	1,329,238
Pittsburgh, Shawmut & Northern	192,856	384,802	130,662	158,300	323,518	543,102
Virginian	1,958,346	2,872,790	275,966	311,164	2,234,312	3,183,954
Western Maryland	1,693,384	2,440,207	3,160,068	3,251,661	4,853,452	5,691,808
Totals	47,198,079	57,900,710	16,811,730	20,648,146	64,009,809	78,548,856
For Company Fuel						
Bituminous:						
Baltimore & Ohio	2,674,069	2,369,638	213,414	130,672	2,887,483	2,500,310
Buffalo, Rochester & Pittsburgh	294,955	395,881	773	244	295,728	396,125
Chesapeake & Ohio	891,770	1,176,722			891,770	1,176,722
Erie	623,524	655,589	938,562	1,115,203	1,562,086	1,770,792
Huntingdon & Broad Top Mountain	12,952	10,614	1,014	3,268	14,056	13,882
New York Central (Buffalo and east)	842,469	771,463			842,469	771,463
Norfolk & Western	1,172,825	1,238,917	215,044	286,652	1,387,869	1,525,569
Pittsburgh & Lake Erie	125,252	145,874	142,062	118,670	267,314	264,544
Pittsburgh & Shawmut	17,386	22,134			17,386	22,134
Pittsburgh, Shawmut & Northern	17,444	27,824			17,444	27,824
Virginian	147,748	229,067	1,641	4,432	149,389	233,499
Western Maryland	167,932	296,125	104,763	21,690	272,695	317,815
Totals	6,988,326	7,339,848	1,617,363	1,680,831	8,605,689	9,020,679
Coke for Revenue and Fuel						
Baltimore & Ohio	533,112	900,974	311,124	484,043	844,236	1,385,017
Buffalo, Rochester & Pittsburgh	120,900	106,300	135,536	200,218	256,436	306,518
Chesapeake & Ohio	264,597	278,366	21,867	75,815	286,464	354,181
Erie	53,406	103,438	128,565	236,819	181,971	340,257
Huntingdon & Broad Top Mountain	45,200	35,624	3,343	21,836	48,543	57,460
Norfolk & Western	575,563	567,080	59,211	112,550	634,774	679,630
Pittsburgh & Lake Erie	196,289	179,626	2,197,850	1,769,374	2,394,139	1,949,000
Virginian			125		125	
Western Maryland	23,301	26,797	198,274	92,802	221,575	119,599
Total	1,812,368	2,198,205	3,055,895	2,993,457	4,868,263	5,191,662

NOTE—No report was received from the Buffalo & Susquehanna and Pennsylvania Railroads.

August Exports Increase at Port of New York

Exports of anthracite through the Port of New York during August of this year amounted to 70,930 tons valued at \$1,103,728. There were 35,250 tons of bituminous valued at \$454,543 exported during the same period, and 6,285 tons of coke valued at \$126,417.

Of the anthracite sent abroad 25,819 tons went to France and 16,689 tons went to the Netherlands. Canada secured 6,003 tons and Denmark got 5,621 tons.

In the list of countries receiving bituminous, Sweden leads with 25,006 tons, while the Netherlands received 7,100 tons. Of the coke sent abroad, Denmark received 3,916 tons.

A comparison of coal and coke exports during the month of August in the past four years shows the following:

	1917	1918	1919	1920
Anthracite:				
Tons	3,942	10,460	4,703	70,930
Value	\$29,317	\$72,264	\$40,871	\$1,103,728
Bituminous:				
Tons	967	10,149	1,626	35,250
Value	\$7,786	\$72,612	\$11,900	\$454,543
Coke:				
Tons	1,763	333	300	6,285
Value	\$26,359	\$9,032	\$4,664	\$126,417

Canadian Fuel Situation Is Improved

Canada received 2,033,101 net tons of bituminous coal from the United States in August. During the last three years this record has been exceeded in only three months, June, 1919, and July and August of 1918. September figures are not available, but it is estimated that receipts were slightly greater than in August. Reports from the Board of Railway Commissioners of Canada, to which the Fuel Administrator's powers were passed, are to the effect that the situation in Canada, due to the increased shipment of American coal, now is much more encouraging. The complaint has been made that there is undue delay to coal cars moving into Canada. The Railway Commission has attacked that problem vigorously and reports considerable increase in car-miles. It is pointed out that Canada is making a better showing in the return of coal cars than the United States roads are making in returning Canadian-owned box cars.

The suspension of the New England priority order already has been reflected by the greater ease with which Canadian agents are able to purchase coal in this country.

The new order issued by Canada requiring a permit for export coal to the United States was not issued, it is pointed out, with any desire to curtail the movement of coal to that section of the United States which is dependent upon Canada for coal. It has been found that some Canadian coal was being taken through the United States and exported from American ports. As a result the permit system was inaugurated so that exact knowledge could be had of the destination of all coal.

News from the Capital

By Paul Wooton



Prosecutor of Coal Cases Resigns in Disagreement with Palmer

THE resignation at Indianapolis of Dan W. Simms, Special Assistant Attorney General in the cases pending in the Indiana courts against coal operators and miners growing out of last winter's coal strike, has caused a flurry in Government as well as coal circles. Mr. Simms is reported to have resented directions of the Attorney General in the matter of evidence to be presented when the cases come to trial next month, but Attorney General Palmer denies the existence of differences.

It is said that Mr. Simms gave as his reasons for resigning that the Attorney General by instructions had "literally cut the heart out of the case."

Attorney General Palmer expressed surprise at Mr. Simms' resignation but said the incident would have no effect on his determination not to allow prosecution of men for an offense which became a closed incident when they obeyed the court's decree, referring to instructions issued that in the new trial old evidence should not be used. He said the facts which were the basis for the contempt proceedings would not be again used against the defendants, and that Mr. Simms must have understood his former statement to this effect.

Passing of Coal Crisis Indicated

THERE is a very general feeling in Washington that the crisis in the coal situation has passed. The mild weather of the last two weeks has aided the situation very materially. The cold wave which is predicted at the time of this writing is expected to renew the clamor for domestic coal, but since state authorities are satisfied that the new service orders and other steps being taken will meet the situation there is nothing to prevent the orderly carrying out of domestic coal distribution.

One of the best-informed coal men in the United States, the head of one of the largest producing companies, states that he senses a very definite slackening in the feverish character of the demand. Buyers rapidly are regaining their equilibrium, he finds. With the railroads furnishing more cars at the mines, heavy production is assured, as is indicated by the output of 12,000,000 tons of soft coal last week. With the closing of navigation, conditions may be expected to return rapidly to normal.

Now that a better opportunity is afforded to survey the effects of the old public utilities order, it is the belief of many that that order was the chief cause of the increasing difficulties which were overtaking general distribution. It is declared that the abuse of that order was not the exception but was all but general. Another bad effect of the order is said to have been the forwarding of much run-of-mine coal to public utilities. This materially reduced the amount of lump coal for domestic fuel.

Representatives of the coal industry in Washington apparently no longer are worried over state price-fixing activities. It is believed that these activities will soon prove to have been misconceived and be found unworkable. The Indiana case is cited as an example. Since the prices fixed are not to apply on coal in interstate commerce, it is expected that the effect will be that all Indiana coal will be sold outside the state. Since coal going into Indiana from other states may be sold at the outside price, plus the

dealers' margins, it is expected that the people of Indiana soon will realize that the results of the new law will be to decrease the amount of coal available and to increase prices.

President Requests Anthracite Miners and Operators to Reopen Scale

REPRESENTATIVES of the anthracite operators and mine workers have been requested by President Wilson to meet at Scranton, Pa., Oct. 18, to adjust such inequalities as the mine workers allege are to be found in the wage award recently made by the Anthracite Coal Commission.

The action of the President followed a request made by the mine workers' policy committee that the award be reopened. On Oct. 11 the President in a telegram to the mine workers' representatives said that contracts should be observed but added that if inequalities exist in an agreement he saw no objection to their correction if both sides should agree upon a remedy.

His telegram reopening the award was as follows:

I am in receipt of your telegram advising me that the anthracite miners have returned to work in accordance with the terms of their agreement, and asking that I call the representatives of the anthracite operators and miners into joint conference for the purpose of adjusting inequalities in the present agreement.

I congratulate you and the miners you represent upon the prompt manner in which you have complied with the award of the Anthracite Coal Commission. I am convinced that the future of collective bargaining depends upon the fidelity with which each side adheres to the terms of their contracts. If any inequalities exist in an agreement I can see no objection to their being corrected if both sides can agree upon a remedy.

In compliance with your request, therefore, I will request the representatives of the anthracite operators and miners, and do hereby request them, to meet in joint conference in the city of Scranton, Pa., on Monday, Oct. 18, 1920, at 11 a.m. for the purpose of adjusting any inequalities in their present agreement as they may mutually agree should be adjusted. I am sending a copy of this telegram to the secretary of the joint scale committee of the anthracite coal fields, with a request that it be communicated to both operators and miners.

National Coal Men Call Special Meeting

A SPECIAL meeting of the entire membership of the National Coal Association has been called for Tuesday morning, Oct. 26, at the Hollenden Hotel, Cleveland. The purpose of the meeting is to place before the membership for consideration and action the facts in regard to conditions confronting the coal industry. Proposed state and federal action for the regulation and control of the coal industry, Colonel Wentz states, should have the personal attention of the members without further delay, as the officers and directors cannot assume the responsibility of acting until the course to be pursued has been decided upon. All coal producers in the United States have been invited to attend, whether they are members of the association or not. Attorney General Palmer has requested the National Coal Association to make the question of fair prices for coal a feature of this meeting, having assured Col. Wentz that such action will not be considered by him in violation of the Sherman anti-trust law. Mr. Morrow has telegraphed all coal operators of this request.

British Mine Workers Declare Nation-Wide Strike

Leaders Say Strike Is Not Called to Secure Nationalization of Mines—
Mine Workers Seek to Obtain Profits from Sale of Export Coal Which
Now Goes to Government for Extinguishment of National War Debt

THE strike called by the mine workers of Great Britain by a vote of 635,098 to 181,428, which commenced last Saturday, Oct. 16, is still "in full blast" and seems likely to continue, but the other members of the Triple Alliance—the railroad and transport men—have not yet joined in and are probably not in entire sympathy with the movement. So far there has been no interference with the ventilation or pumping facilities. The strike is in every other way complete. No coal is being dug or raised from the pits.

The mine workers' claim is that the domestic coal supply should be subsidized by the profits made in the sale of export coal. As it now is, only one-tenth of the surplus profits go to the mine operator. Even this is split by the excess profits tax. The other nine-tenths go to the Government Exchequer, which uses it to assist in the payment of the national debt. The mine workers urge, furthermore, that the wage advances should not be limited to living bonuses. On the other hand, the operators declare that while the cost of living has increased 152 per cent, miners' wages have risen 157 per cent, and the skilled engineers' wages have been increased 132 per cent. The Ministry of Labor declares in its official figures that the cost of living has gone up 155 per cent, but the miner is still getting free or cheap coal and by that fact is assured of a saving of \$40,000,000 a year.

HOURS DECREASE THOUGH DAILY WAGES RISE

The average earnings per shift of all classes of colliery workers have risen from 6s. 6d. (\$1.58) per shift in June, 1914, to 16s. 6d. (\$4.01) in June, 1920. Adult male colliery workers were paid an average of 7s. 1d. (\$1.72) in 1914 and when the strike started were receiving 18s. (\$4.98) a shift. This figure does not include district or local increases. Back in 1913 the annual earnings of all classes of mine workers—boys and women included—averaged \$400, whereas today their earnings are \$1,071.

This does not express the whole change, for the mine worker's day has been shortened an hour without reduction of pay. He promised production should not suffer, but it has. In 1913 workers to the number of 1,110,000 produced 287,500,000 long tons and this year—if past performances were figured and had the strike not occurred—1,206,000 employees, the present number, would produce 240,500,000 long tons. Piece rates were raised 13.2 per cent, or one-seventh, to make up for the shorter

hours. Why the miner needed an increase in wage if his shorter service would give an equal result deserves explanation, but the mine worker does not intend to make good his assertion that lopping off one of his hours will not lessen the output, so he safeguards himself by asking more pay per ton. The miner now works only 4.9 days a week. If he would have more pay, he could easily get it by returning to the eight-hour shift.

With roughly 100,000 more men in the industry, production has been cut down 47,000,000 tons, about twice the amount demanded of Germany at the Spa convention. Yet we have been told that this was such a huge amount that Germany could not furnish it. An increase in the number of employees of 8 per cent has resulted in a decrease in tonnage of 16 per cent.

Taking the output per unit of labor as 100 per cent in March, 1915, when regulation by conciliation boards was practically discontinued, the product was as follows:

September, 1917, first war wage.....	93.7
June, 1918, second war wage.....	87.1
March, 1919, Sankey wage.....	84.0
May, 1920, 20-per cent increase.....	77.4

From July, 1919, the day has been of seven hours' duration. If the shift rate is raised, it is probable that the present figure of 77.4 per cent will be reduced still further.

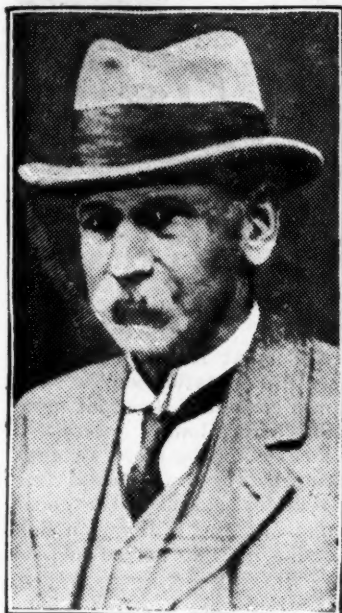
The Government has not been slow to prepare for the possibility of a strike. Illuminated advertising signs and lights in store windows have been prohibited. The sugar ration has been halved, and military leave has been stopped in at least some sections. While some of the big factories near Sheffield have coal enough to last for three weeks, the average supply of coal will last only a week. By next Saturday, when the strike is a week old, there will be at least another million men idle.

MINERS HAVE NO MONEY FOR LONG STRIKE

Only in South Wales are the funds of the mine workers adequate for a long strike and then only with strike benefits set at a pound (\$4.87) a week, which in these days is wholly inadequate, and this consideration is troubling the mine workers' wives. It has been said that boys between 14 and 18 were unanimous for a strike, feeling that a few days of idleness would be a welcome relaxation. In Scotland seven out of ten voters for a strike were between these ages.

The other members of the "triple alliance" greatly question whether they should come out in sympathy or

Number of mine workers involved, 1,206,000. Probable output in 1920, 240,500,000 long tons. Increase demanded, 2s. (49c.) per shift for mine workers 18 years of age and upward and 1s. (24c.) per shift for persons 16 to 18 years old, with 9d. (18c.) per shift for those under 16 years of age. Men also demanded a decrease in selling price of coal of 14s. 2d. per ton. Profit on exported coal expected to be \$330,000,000 in 1920. No surplus profits on domestic coal under present conditions. Mine workers refuse to make any promises that they will increase production should the Government accede to their demands.



Robert Smillie

PRESIDENT, MINERS'
FEDERATION OF
GREAT BRITAIN

He is a great advocate of nationalization of mines and his outspoken declaration that the strike was to secure this advantage to the mine workers has made the union men of other industries unsympathetic to the strike.

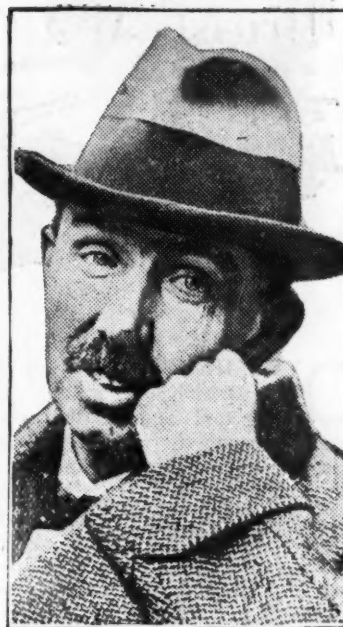
Courtesy of N. Y. World

J. H. Thomas

GENERAL SECRETARY,
NATIONAL UNION
OF RAILWAYMEN

One of the big figures in the Triple Alliance of miners, railroaders and transport men. The hope is that the railroad men will come out on strike in sympathy with the miners and Thomas' actions are consequently watched with suspense.

Courtesy of N. Y. World



not. The railroad men and transport workers realize that a defeat would be a blow to unionism in general, but they cannot help seeing that prices seem to have reached a point at which they will begin to decline, and they cannot shut their eyes to the fact that many

men are idle and the time not auspicious for a showdown. The miners in France, Germany and Belgium have promised to go on strike in sympathy, if any coal is shipped from the mines of those countries to Great Britain.

Indictment of Coal Men Not To Be Pushed If Prices Are Reduced

ANTI-PROFITEERING activities of the Department of Justice during the past week have included the securing of indictments against forty coal companies in southern West Virginia, active prosecution of coal grafters in New York City and further promotion of the idea of fair-price committees of coal men as typified in the northern West Virginia fields. A feature of the move in West Virginia is the practical placing of a limit on the scope of the fair prices to purely local sales. It is understood that the Department of Justice does not consider that this is sufficient, although it is evident that in each judicial district the U. S. Attorney is interested in and has power to investigate only the prices that are being charged on sales within that territory.

Operators from northern West Virginia held a meeting in Washington on Oct. 12, at which chairmen of local committees were appointed. The main committee met again in New York on the following day, at which a telegram from Attorney General Palmer was considered. The telegram follows:

Referring to your report as chairman of a committee of bituminous coal operators from the northern district of West Virginia that prices of bituminous coal delivered in that district have been recently substantially reduced through the efforts of your committee. This is gratifying but does not afford relief to the rest of the country. It is of the highest importance that the reduction in prices thus begun should be extended so as to include operations in other districts and coal for delivery throughout the country. I am extremely desirous that such action shall be taken by yourself and other operators throughout the country as will be to the best interests of the country and will lighten the work of the Department of Justice by reducing the number of prosecutions to be instituted for violation of the Lever Act in charging unreasonable prices.

There is a general feeling that if coal prices can be held within reason by the moral suasion of the leading producers and distributors or by the pressure of the Department of Justice, actual prosecution of the indictments that have been returned will be eventually staved off and further action forestalled.

Indictments returned a week earlier by the Federal Grand Jury sitting at Huntington, against forty coal companies

and individuals engaged in the coal business in southern West Virginia, were made public Friday, Oct. 15, following an announcement by Judge J. C. Pritchard of the U. S. Circuit Court of Appeals at Huntington that he could not grant the petition for an injunction restraining the prosecution of the various companies.

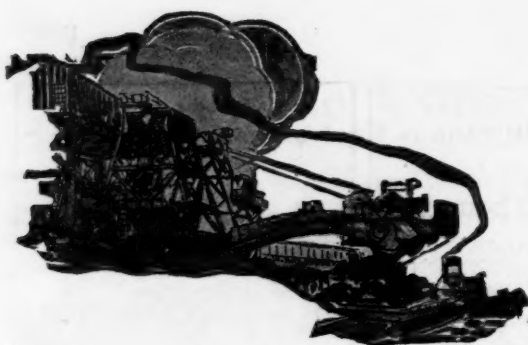
From what Judge Pritchard said and from an announcement made by the U. S. Attorney, supplementary in a way thereto, it is not believed that the companies and individuals will be brought to trial under the indictments so long as court officials are satisfied that a bona fide effort is made by the various companies now under indictment to adhere more closely to the Lever Act provisions. Though no injunction was issued Judge Pritchard said there would be no attempt to proceed to trial until after the Supreme Court passed upon the constitutionality of the Lever Act, the cases being set for trial at another term at Charleston.

New York Has Anti-Profiteering Committee; Mayor Offers Help to U. S. Attorney

SCARCITY of coal and fear that there would be much resultant suffering during the coming winter caused several important developments in New York City last week. During the same period the directors of the National Coal Association held a meeting at the Waldorf-Astoria at which it was predicted there would be no coal shortage if the railroads furnished sufficient cars to the mines.

Following a hearing held on Oct. 11 by Public Service Commissioner Lewis Nixon to ascertain the needs of the public utility corporations and to ascertain what steps had been taken by them to obtain adequate supplies of coal for the coming winter the Commissioner appointed a committee to see that the corporations get sufficient coal and to stop profiteering in priority coal. This committee consists of Frank Hedley, president of the Interborough Rapid Transit Co.; M. S. Sloan, president of the Brooklyn Edison Co., and J. W. Lieb, vice-president of the New York Edison Co.

In opening the hearing Commissioner Nixon said he hoped to put a stop to "some of the pernicious practices of certain public utilities in regard to the disposition of coal obtained under Federal permits on representations by these companies that they needed the fuel for their own use."



Production and the Market



Weekly Review

OVERSHADOWING every other feature of the week is the British coal strike. One million men lay down their tools and the production of 5,000,000 net tons per week is lost to the world at a time when it is sorely needed. Speculation as to the effect of this strike centers about export prices on this side which have largely influenced domestic prices along the Atlantic seaboard this year. It appears that with dumping at the rate of nearly 65,000,000 tons a year the limit in exports has about been reached with nearly 2,800,000 net tons a month for foreign account. Although more coal may not be shipped abroad, no matter what the need of Europe in the present emergency, the bidding for what is shipped may reach new high levels. One grain of comfort for France at this time is found in the report that Germany is now shipping coal at the rate called for by the Spa agreement, having delivered to France about 1,500,000 metric tons in September.

FRANCE ASSISTS IMPORTATION OF AMERICAN COAL

France wishes to encourage the importation of American coal and the drawback granted importers has been raised from 100 francs per ton to 150. This drawback will remain in force until January, 1921. According to reports, French gas companies and railroads have coal stocks about equal to their pre-war supplies, which in the case of the railroads ran approximately 850,000 tons. In 1919 the average coal supply of the railroads was only 240,000 tons.

While Great Britain is settling down to fight out the coal strike, production here has been pushed up to the mark of 12,000,000 tons set last summer by the railroads and coal

men. There is a general feeling that if this is kept up until the end of the Lake season, the situation will be saved as far as danger of a shortage is concerned and that prices will of themselves take a tumble before long.

Car supply improves as the effect of the more stringent priority order is kept and as open tops are released from other uses. Labor is working better except in the openly hostile camps, such as Alabama and the Williamson field. The settlement of the stone strike in Ohio helped increase output last week.

BITUMINOUS

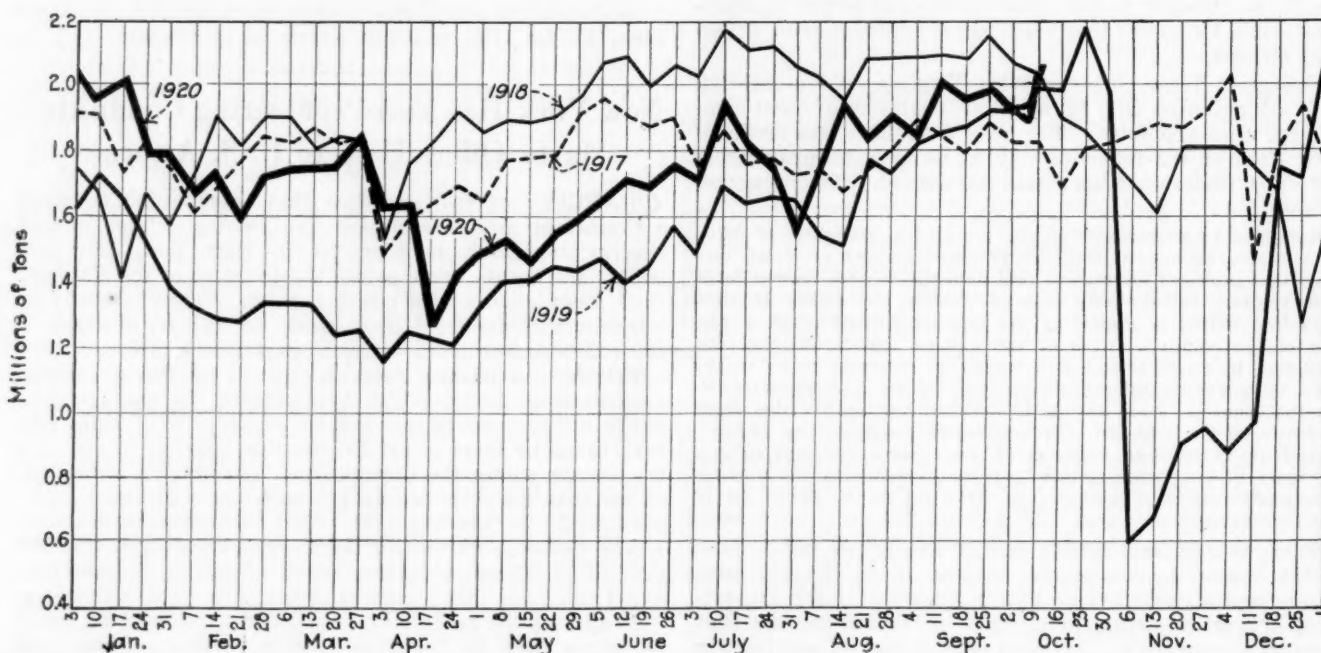
Production during the week ended Oct. 9 recovered from the temporary depression due to labor disturbances in Ohio and passed the 12,000,000-ton mark for the first time since last winter. (See page 877.) The total output is estimated at 12,075,000 net tons, according to figures of the Geological Survey, an increase of 6.2 per cent over the preceding week's output.

Car supply is greatly improved. The recent Interstate Commerce Commission orders concerning coal-car distribution have resulted in better movement and the machinery of production now seems to be in high gear. A majority of the reports indicate satisfactory increases in placements, although Pocahontas, Tug River, Kanawha and western Kentucky sections experienced a decline in car supply.

AS WAGES INCREASE MINERS WORK LESS

With better movement of cars, labor is again responsible for a heavy loss of production. Although no serious new disturbances are noted, recent wage increases have had the

Average Daily Production of Bituminous Coal*



*From weekly report of Geological Survey.

Lake Coal Dumped Season to Oct. 16

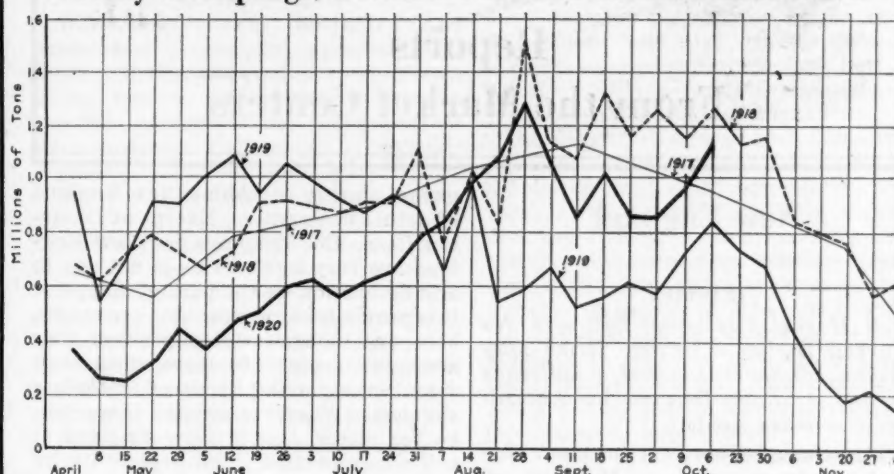
(NET TONS)

	1919	1920
Cargo ...	19,749,510	17,049,727
Fuel	928,508	982,560
Total ...	20,678,018	18,032,287

Week of Oct. 16, 1920

Cargo	1,060,374
Fuel	44,010
Total	1,104,384

Weekly Dumpings, Bituminous Coal at Lake Erie Ports*



*From weekly report of Geological Survey.

effect of making the men content with even less working time than before. Some dissatisfaction is still to be noted in the eastern Ohio field, where the radical element is attempting to stir up trouble over the result of the recent strike.

Pittsburgh district coal is firm—steam, \$8.50@\$9; gas, \$10.50@\$11—with demand a little weaker. Eastern Ohio coal for Lakes is quoted \$7; spot market, \$7.75@\$8.50. Uniontown section reports a sharp decline to \$7.50@\$8.50, caused by a partial export embargo. Eastern Kentucky grades are much lower, due to price investigations in that section, while western Kentucky is strong—\$5.50@\$6.50. The Middle Western market is softer; steam at \$5@\$6.50, Chicago quotations; domestic, \$6.50@\$7.75. St. Louis market is strong—\$5@\$8—with little free coal available, due to new railroad contracts. New York market fluctuated, Tidewater quotations being \$13@\$14.50. Philadelphia steam coals declined, while fuel for special purposes was quoted at \$11@\$12. The export trade again led the spot market and additional strength is seen because of the British strike.

SHIPMENTS TO ALL TIDEWATER PORTS INCREASE

Movement to Tide increased during the week ended Oct. 9, when cars dumped over the piers numbered 27,697 as against 26,361 the preceding week. There was an increase at all five of the coal ports. Destination of coal dumped at Tide is given in the following table. Shipments to New England were 202,000 tons, almost exactly the same as during the preceding week. Exports declined slightly and there was an increase in the tonnage for bunker, etc.

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charles-ton	Total Dumped
Coastwise to New England.....	71,000	12,000	27,000	92,000	.....	202,000
Exports.....	105,000	142,000	337,000	31,000	.....	615,000
Bunker.....	83,000	12,000	17,000	75,000	5,000	192,000
Inside capes.....	.....	39,000	29,000	4,000	3,000	75,000
Other tonnage.....	187,000	.....	.....	12,000	.....	199,000
Totals.....	341,000	168,000	215,000	520,000	39,000	1,283,000

September set a new record for bituminous coal handled over Tidewater piers. The total, as reported by the Geological Survey, was 5,447,000 net tons, an increase of 95,000 tons over August, 1920, hitherto the record month. Exports rose to a new record of 2,332,000 tons.

SEPTEMBER TIDEWATER DUMPINGS

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charles-ton	Total Dumped
Coastwise to New England.....	389,000	63,000	141,000	515,000	.....	1,108,000
Exports.....	436,000	68,000	121,000	24,000	4,000	305,000
Bunker.....	83,000	12,000	17,000	75,000	5,000	192,000
Inside capes.....	.....	39,000	29,000	4,000	3,000	75,000
Other tonnage.....	187,000	.....	.....	12,000	.....	199,000
Totals.....	1,608,000	726,000	853,000	2,175,000	85,000	5,447,000

All-rail movement to New England recovered again during the week ended Oct. 9. Carloads forwarded through the five Hudson gateways are reported at 6,004 an increase of 1,078 over the preceding week and the largest since Aug. 14.

Lake dumpings for the week ended Oct. 16 reflect the additional equipment made possible by the recent I. C. C. orders combined with better transportation facilities, when dumpings of cargo and fuel coal amounted to 1,104,384 tons. Lake offerings are in advance of takers, as the trade fears to stock high-priced coal now being offered. Better rail facilities have afforded the railroads a good supply from the southern Illinois fields, which if drawn on throughout the season will cut down the dock storage requirements by 40 per cent. Destination of the limited tonnage of cargo coal actually handled at Lake ports in 1920 has not varied greatly from normal as indicated by preceding seasons. As shown by the following table, of the 14,604,000 tons dumped up to Sept. 30, 4,083,000 tons were for Canadian destinations—28 per cent of the total, as against 24.3 per cent in 1918 and 20.9 in 1919. The outstanding feature of the distribution of 10,521,000 tons shipped to American ports was a decrease in the proportion moving to Lake Superior and Lake Michigan and an increase not only in the proportion but the total going to Port Huron and Detroit River points.

Destination	1918		1919		1920	
	Net Tons	Per Cent	Net Tons	Per Cent	Net Tons	Per Cent
American:						
Lake Superior ports.....	8,782,911	42.3	7,761,286	43.9	5,683,560	38.9
Sault Ste. Marie Pt. and River points.....	466,059	2.2	276,289	1.6	423,847	2.9
Lake Huron-Georgian Bay ports.....	385,891	1.9	238,174	1.3	155,066	1.0
Lake Michigan ports.....	5,718,100	27.5	5,419,006	30.6	3,602,451	24.7
Port Huron and Detroit River.....	314,808	1.5	240,146	1.4	628,370	4.3
Lake Erie ports.....	65,879	0.3	59,156	0.3	27,815	0.2
Total American.....	15,733,648	75.7	13,994,057	79.1	10,521,109	72.0
Canadian:						
Lake Superior ports.....	1,742,523	8.4	1,283,495	7.3	1,195,980	8.2
Sault Ste. Marie Pt. and River points.....	925,653	4.5	648,996	3.7	869,282	5.9
Lake Huron-Georgian Bay ports.....	864,251	4.1	576,735	3.3	613,551	4.2
Port Huron and Detroit River.....	375,864	1.8	286,987	1.6	304,673	2.1
Lake Erie ports.....	16,962	0.1	37,988	0.2	9,678	0.1
Lake Ontario and St. Lawrence River.....	1,119,350	5.4	852,965	4.8	1,090,120	7.5
Total Canadian.....	5,044,602	24.3	3,687,166	20.9	4,083,284	28.0
Grand total.....	20,778,250	100.0	17,681,223	100.0	14,604,393	100.0

ANTHRACITE

Anthracite production continued to increase during the week ended Oct. 9. Shipments were the largest of any week since July. The total production was estimated at 1,847,000 net tons as compared with 1,804,000 tons for the preceding week. Prices for Independent product continue high, in some instances \$14@\$15 f.o.b. mines.

Reports From the Market Centers

New England

BOSTON

Dull Market Continues, but with No Marked Decline—British Strike May Stiffen Off-Shore Demand—Railroads Buying All-Rail—Demand for Anthracite Continues Acute.

Bituminous—There is demand for high grade gas coal on the part of manufacturers of certain metal specialties, due chiefly to the priority given Western shipment, but in time these requirements will be met and then high volatiles will be in the same position now held by steam grades. Some of the textiles have so far curtailed production that they have ample fuel reserve for the whole winter, a condition thought almost impossible 90 days ago. Business in most lines is so far on the slump that only a most unlooked-for turn of events can bring back anything like an active buoyant market.

Quotations show the moderate trend of spot prices. The better grades, Pools 1, 4, 9, 10, and 71, are offering only in light volume and what spot demand there is all-rail is therefore narrowed down to the less favorably known coals. Medium high volatiles can be bought at \$8.25@8.75 at first hands, making it clear that after all the current market shows a certain stability. There has not been the decline this week that was anticipated, but none of the near-firmness can be attributed to any inquiry from New England.

Tidings of labor troubles in Great Britain may quicken the demand for the grades available for export. There are certain areas still being served from British ports and any serious breakdown there will inevitably throw an emergency demand upon our Atlantic ports.

The only other bull point in the present spot market is the continued call for railroad fuel. This is also due to the effect of priorities upon shippers in the Pittsburg region who have contracts, with the railroads now in the open market to a limited extent. In most cases the full market price is being paid for prompt shipment, but should the market advance a dollar a ton it is more than likely this type of buying would cease, and recourse would be had to the West Virginian districts where more moderate price and labor conditions prevail.

Recent figures show clearly that this territory is getting its full quota of current production. Receipts both all-rail and by water are only slightly less than the totals for export at all the Atlantic ports. This should make effective disposition of the claim that the

export market is robbing New England of actual necessities. Except at Hampton Roads the dumpings for New England are very light. This is not due to any dereliction on the part of shippers; it is purely because now that consumers here are in comfortable position they are quite content to leave their individual cases in the hands of smokeless shippers. Whatever demand there may be for water coal in New England it will easily be met, in all probability by shipments from Hampton Roads.

Current prices on bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, per net ton	\$8.00@9.50	\$8.50@10.10
F.o.b. Philadelphia, per gross ton	11.60@13.29	12.07@13.85
F.o.b. New York, per gross ton	12.00@13.75	12.50@14.25

Prices on cars at Boston, Providence, and Portland range from \$13.50@15 per gross ton for inland distribution. At retail the range is from \$13.50@16 per net ton, delivered.

Anthracite—In all quarters there is insistent demand for domestic sizes. The Massachusetts Fuel Administrator, Mr. E. C. Hultman, is devoting himself to the situation with much energy and with corresponding good sense. The old-line companies are supervising distribution with great care and every endeavor is made to bring all the communities in distress up to 50 per cent of the total tonnage they received during the previous coal year. The City of Providence had on hand a few days ago only slightly over 3,000 tons of domestic coal, something less than a week's supply.

Tidewater

PHILADELPHIA

Mild Weather Aids Anthracite Situation—Steam Sizes Well Sold—British Troubles Cause Heavy Export Calls for Bituminous—Prices Are Stronger—Rail Movement Has Improved.

Anthracite—Unusually mild weather is about all that prevents a crisis in the anthracite trade. The retail yards, with the exception of a small quantity of pea, are empty and the demand from consumers is strong.

Shippers still insist that they have supplied this market well up to the average of former years and tell the dealers if any of their trade is without coal they have themselves to blame in not properly distributing it. That, however, seems to be about the only excuse the shippers are willing to offer now, as they have talked so much about Lake and New England shipments that

dealers accept this explanation as a forgone conclusion to their interviews.

The unseasonable weather has a tendency to hold the consumer to his preference for sizes, with the strongest call being for stove. Nut is badly wanted and while the number of demands for pea are less than the other sizes this does not mean that pea is heavy with the retailers. Always at this time of year dealers have held heavy stocks of it for the winter demand from that portion of their trade who by force of circumstances only buy coal as they need it.

The retail trade have recently made more frequent inquiries than ever as to the situation in regard to bituminous coal, believing in the present shortage they might be able to use a small quantity of soft coal for domestic purposes. Even the dealer is surprised upon investigating the bituminous market to find that to market this coal to householders it would have to be done at a price usually in advance of the larger anthracite sizes.

With the exception of barley the steam sizes are almost impossible of attainment by new trade. There is a certain tonnage of buckwheat to be had from the independents at prices of \$6@6.25, with rice around \$4.35. There is a fairly good demand for barley, although individual shippers are not getting much if any premium on this size, the price usually being close to \$2.25.

Bituminous—Local demand continues in moderate measure. The big industrial users are not at all active in coming on the spot market, as they appear to be getting sufficient contract coal to meet their current needs and then a little to spare for stock. This is particularly true in the big textile industry of this territory, where very few plants are making more than 50 per cent working time. On the other hand the mild weather has also been conducive to activity in other lines, such as brick-making and cement, the latter needing slack coal particularly.

The coming of the big coal strike in England is making its effect felt here on prices even at this time, and it has really been anticipated for the past several weeks in the slow recession of prices. In the spot market Pool 10 is holding close to \$10@10.25, with Pool 11 from \$9@9.50. Gas coals also continue high, Pennsylvania low-sulphur being mostly moved \$10.75@12, and Fairmont \$10.75.

Rail movement has shown a decided improvement, especially via the B. & O., and producers in that region report a car distribution the past week of close to 40 per cent and better, with fairly prompt movement of cars after loading. On the Pennsylvania R.R. the car supply has averaged 30@35 per cent, with little complaint at all as to delivery.

Railroads are still in need of heavy tonnage and are stocking quite generally. This removes a considerable tonnage from the market and, of course, assists in holding prices.

Due to the British strike, foreign inquiries will rapidly increase and in fact have already done so. A big proportion of the production is now moving for export and it is hard to see, with the present facilities, how this business can be increased. Tide prices on free coal average about \$15 on the wharf.

In addition to the big export trade the bunkering business, which all along has been heavy, will also greatly increase, as vessels must bunker for round trips.

While the number of preferential orders covering domestic trade has been greatly reduced, those for the utilities are still in effect, and there are also faint indications that others may be made shortly. Reports are reaching here from distant parts of the country claiming to be short of fuel and asking preferred treatment. Should this become necessary it is believed that the first step taken to meet it will be in restricting the number of permits which are issued for export coal.

NEW YORK

Anthracite Trade Is Unsettled—Domestic Calls Are Urgent—Heavier Receipts Are Only a Matter of Time—Independent Quotations Are High—Bituminous Prices Fluctuate—Lower Prices Are Anticipated—Export Demand Is Good.

Anthracite—There is much dissatisfaction expressed on all sides because of trade conditions. The public has been led to believe that there is likely to be serious times this winter because of the lack of coal and, whether the consumer has his bin partly or completely filled, the dealer has to listen to more demands for deliveries.

Shipments are not as large as the trade hoped for when the mines resumed operations but dealers take some satisfaction out of the situation by knowing that when movement to the Lakes and Northwest are stopped at the end of the next few weeks considerable of that tonnage will be diverted in this direction.

Producers and shippers are endeavoring to distribute their supplies evenly. In addition to the demand of local dealers they have many inquiries from New England and Long Island points. New England dealers are in better shape than most retailers in Greater New York, as they receive their shipments by rail whereas most local dealers get coal by water from the railroad docks.

Dealers have undertaken to distribute supplies in small lots so that everyone can get some coal. Those without fuel are not so numerous as in former years, the dealers having delivered more coal than usual at this time of the season.

There is a heavy demand for independent prepared sizes with quotations all the way up to \$14.50. Pea was quoted \$10@12. Steam coals are in good demand. Quotations for buckwheat range \$6@6.50; rice \$3.75@4.25 and barley around \$3. Quotations for company coals, at the mine and

f.o.b. New York Tidewater, upper and lower ports, are unchanged.

Bituminous—Prices fluctuated and quotations frequently changed last week. Indications point to a slump. There was no active buying even in the face of reports that mine-workers were restless. Car supply is very irregular.

Demand for domestic purposes was slow. There was a good call for export but the issuance of permits was slower. Coals for bunkering were in heavy call. Railroads were easing up in their buying and this was pointed out by some dealers as a good sign of a further drop in prices as soon as some of the coal usually taken by the roads can find its way into the open market.

Because of the slump in many lines of industry, manufacturers are not replenishing their stocks as quickly as anticipated. They hesitate to pay present quotations in the hope of seeing cheaper coal with the close of Lake navigation. There is not much free coal available here. Producers are not sending heavy tonnages to Tidewater except on order. The better grades are scarce.

Early in the week Pool 11 was quoted \$8.50 at the mines, but at the end of the week the quotations ranged as high as \$9.50. Pool 10 was \$9.25 @ \$10.25. A small amount of Pool 34 was quoted at \$9.24 on one day, while the existing market price was about \$10.75. For export purposes Pool 34 was quoted at \$10.50 late in the week. Most sales at this Tidewater ranged \$13@14.50.

BALTIMORE

Tightening of Export Permits Releases More Coal on Local Market—Demand Is Excellent—Prices Remain Fairly Firm—Car Supply Is Unchanged—Ship Congestion Lessened—Hard Coal Dealers Apportioning Supply.

Bituminous—Soft coal market conditions here are undoubtedly a little easier. This has to do particularly with Pennsylvania coals, which for the first time in weeks are offering a little below the prices for B. & O. line fuels. This result is largely due to the tightening up of permits for Tide shipments. Considerable fuel that might have gone that way has thus been forced on local and Eastern seaboard generally for sales.

Best B. & O. line coals are at this time holding firm, \$10@10.25 f.o.b. mines, while Pennsylvania fuels of best grade are offered \$9.75@10.

Demand here is excellent, however, and the fact that car supply still remains comparatively low is having the effect of preventing any sharp break. The run of cars for the past week has been for the most part around 65 per cent, although on some days as low as 51 per cent.

At the piers great efforts have been made to end congestion of ships, as some 50 odd had gathered in the harbor for coal cargoes. On one day the B. & O. piers at Curtis Bay alone

dumped 656 cars, which was probably a record. The number of waiting ships, kept down by permit restrictions as to newcomers, has been greatly reduced. Export movement for the first half of October will probably stand in the neighborhood of 230,000 tons.

Anthracite—Dealers are welcoming the continued warm weather as it cut off the spurt of early consumption that came about 10 days ago with a brief cool snap. Receipts here continue slow and the coal coming in is being apportioned. There is little hope, of course, that the thousands of cellars still without any coal can be filled even in part before cold weather, but retailers are trying to do the best for all concerned, and are hotly urging shipment on their long-standing mine orders.

A census of cellars made by the lighting company here showed 29,000 homes without coal late in September. During the peak of the war there were 10,000 homes on Dec. 1 without coal, and fuel men here say that unless there is a sudden rush of coal to the city, the trade will be lucky if conditions are not worse this year.

Lake

BUFFALO

Bituminous Consumers Hold Off—Cars Fairly Sufficient—Miners' Difficulties Numerous—Much Complaint of Anthracite Shortage—Lake Shipments All Improved.

Bituminous—The contest is still on between the consumer and miner. An effort is on foot to get the several coal interests together and agree on a mine price, but jobbers say that with the present poor demand continuing for two or three weeks longer the prices will have to come down anyhow. The consumers are well stocked up and are indifferent to coal that costs \$8 or more.

One Buffalo jobber with a mine connection figures that actual mining cost is about \$5.50 and he therefore maintains that the asking prices at present are too high. At present operators are able to obtain from \$8@8.50 for their steam coal at the mines and \$10@10.50 for gas and smithing.

It is hard to say what the miners' agitations will amount to. There are local difficulties everywhere with more or less striking. Some of the shippers see in this a mere effort to put a bold face on the situation and keep the consumers from forcing down prices till wages must follow. Others are afraid that the miners' organizations are strong enough to win out anyhow.

To increase the complications still further there is quite an amount of coal selling on contract as low as \$3.50, the jobber as a rule having re-sold it at 25@50c. more. This coal is coming out slowly and is usually less than the contracted amount. Still the mine owner, who is trying to deal honestly, is keeping along by selling his free

coal at considerably more, sometimes making good money on the average.

Anthracite—The situation is decidedly puzzling. How to assure the people who have no winter supply that they will get it in good time is hard to say. Had it been cold the clamor for coal would have amounted to a frenzy. It has now been arranged to fill emergency orders by application to the health department, but the demand will go on in spite of the assurance of shippers that there is coal enough and as much distributed in the city as usual. What is wanted is a full winter's supply now, which is of course impossible.

Certain independent operators are taking advantage of the situation and asking as high as \$16 at the mines, and they get it, though the regular price here, delivered at the curb, is \$13 for large sizes and \$13.25 for stove and chestnut.

Lake—Shipments are good again. Clearances for the week are 130,000 net tons, of which 900 tons cleared for Bay City, 1,200 tons for Kenosha, 2,600 tons for Racine, 7,000 tons for Port Arthur, 28,700 tons for Chicago, 37,300 tons for Milwaukee and 52,300 tons for Duluth and Superior. Freight rates are strong at 60c. to Duluth and Port Arthur, 75c. to Milwaukee, 85c. to Chicago and \$1.25 to Racine and Kenosha.

Coke—The market is quiet, though consumers want orders filled at once when given, as they are mostly a matter of emergency when jobbers are resorted to. Quotations are: Standard Connellsville 72-hour foundry, \$17.75@ \$18.50; 48-hour furnace, \$17@ \$17.75; low grades, \$13@ \$14; domestic sizes, mostly neighborhood by-product, \$8@ \$8.50 at the ovens for chestnut and \$5@ \$5.75 for pea. Chestnut retails at \$13 at the curb, to compete with anthracite. This demand is good.

CLEVELAND

Pronounced Softening of Steam Coal—Downward Revision of Retail Prices Is Planned—Better Receipts and Slower Demand—Lake Dumpings Increase—Labor Efficiency Is Still Low.

Bituminous—This district market has been featured by a decided slump in the price of spot No. 8 mine run coal within the last few days. Quotations are now well under \$7 a ton, with more coal daily becoming available as railroad movement improves and industrial slackening spreads. Some consumers report that they are getting better shipments against contracts carrying price ranges \$3.50@ \$5. Others report continued difficulty in getting deliveries on contracts, although much better service is expected once the priorities on the shipments to the Northwest are ended.

As yet the impulse of the Interstate Commerce Commission's order, diverting coal cars from all other trades with the purpose of vastly increasing the shipments of coal to Middle Western states, has not been felt.

There is no local shortage of coal now for industrial uses. In order not to create another serious situation large consumers are being urged not to attempt to get deliveries on more than thirty days' supply. Operations in the No. 8 district are somewhat improved due to the termination of the unauthorized strike, but labor efficiency is at low ebb. A further sharp break in the prices of coal is predicted in the trade.

Pocahontas and Anthracite—While no reductions of any account have taken place in the retail prices yet, some leading retailers have announced that prices would be revised downward later in the month. With cheaper coal prevailing at the mine, the saving is to be passed on to the consumer. Reductions will be based on the average price paid to operators for the two weeks preceding the new price.

Warm weather has caused a slight easing in the urgent demand for fuel, but receipts are still far below needs. A sharp cold snap would take up all the slack that has appeared in the market. The anthracite market remains firm and no indications of weakening have appeared.

Lake—The new order respecting coal cars is expected by the Ore and Coal Exchange to stimulate receipts for the Northwest trade. Of recent weeks Lake shipments have fallen perceptibly, and the 4,000-car daily movement aimed at has not been attained at any time during October. However, coal is now moving more freely to Lake ports and stocks are heavier than they have been in weeks.

Retail prices of coal f.o.b. Cleveland are:

Anthracite—Egg, \$16; chestnut and stove, \$16.25.
Pocahontas—Shoveled lump, \$16; mine-run, \$12.50.
Domestic Bituminous—West Virginia Splint, \$13.25; No. 8 Pittsburgh, \$12; Millfield, \$14.50; Cannel, \$14.50.
Steam Coal—No. 6 and No. 8 slack, \$11; mine-run, \$12; No. 6 1-in. lump, \$12.

MILWAUKEE

Bituminous Market Is Quiet—Lake Receipts Increase, but Trade Hesitates To Stock at High Prices—Heavy Rail Receipts Lower at Prices—Anthracite Situation Is Unsatisfactory.

Notwithstanding the approach of cold weather and the belief that there will be a serious shortage, the market is quiet. People are buying sparingly, and while some have hoarded anthracite, on the whole there is an absence of the nervous feeling which characterized the earlier period. Mild weather may account for this.

There is a noticeable improvement in Lake receipts of soft coal. Dealers are in a quandary, or this movement would be heavier. The fact is, there is plenty of Eastern coal to be had, but dealers are not stocking up at present mine prices, because of a fear that coal values are due for a slump. This feeling is strengthened by reports from the Illinois fields that coal which has been selling f.o.b. mines at \$7@ \$8 per ton is now quoted \$5@ \$5.50.

Milwaukee is being liberally supplied with Western coal of the poorer grades. Because dealers refuse to make contracts for future delivery, the city is purchasing on the open market, mainly screenings, at \$9.50@ \$11. The anthracite situation is unsatisfactory and it looks as if this grade will command unprecedented prices before spring.

Heavy influx of Western coal improves the car situation and facilitates shipments by rail to the interior.

Receipts of coal by Lake to date aggregate 648,572 tons of anthracite and 1,650,000 tons of soft coal, against 697,710 tons of the former and 2,688,975 tons of the latter during the same period last year.

MINNEAPOLIS, ST. PAUL

Lakes Tonnage Increases Rapidly, Due to Better Transportation Conditions—Jobbers Hesitate To Pay Spot Prices—Roads Draw on All-Rail Fuel.

After a strenuous season, during the entire period of which there was little hope for getting adequate fuel, things seem to be clearing. It is by no means certain that there is to be sufficient coal for the winter, but late deliveries, and a prolonged mild fall give some hope.

During the past few days, the delivery of coal cars at lower ports has been in excess of all previous records. So heavy have they been that the coal is accumulating and threatens congestion.

This establishes two things clearly—that it has never been the fault of the mining concerns that more coal was not forwarded and that the solution lay solely with better car service. Complaint is now being raised that a portion of the accumulation is due to the unwillingness of Northwestern jobbers to buy coal on the figure ruling in the open market, around \$12@ \$13. As long as others are willing to pay this price, it is argued that they cannot hope for a special dispensation at lower figures.

This is countered with the suggestion that it seems to be difficult to get coal on lower figures delivered under last spring contracts. The deliveries of soft coal at the four Lake Superior ports for commercial use are 1,700,000 tons less than last season, to Oct. 1. And last season had about 2,000,000 tons carried over the winter from the previous season.

Some of the railroads are drawing heavily on southern Illinois coal, and are cutting down their dock requirements proportionately. This may mean a material reduction of the tonnage needed on the docks. With the distinct change for the better in the handling of trains and the more efficient handling of switching in terminals, the southern Illinois fields are much more available.

It is to be remembered that the railroads had prepared for the fall rush of grain and merchandise. The grain market is demoralized, and farmers are holding their product for better prices. In merchandise, the sentiment that a general slump of values is started re-

sults in confining buying to narrow limits. This means that the roads have the advantage of a limited freight movement in which to straighten out their traffic tangles. When the rush does come they should be able to meet it with clear yards.

South

LOUISVILLE

Little Free Coal Is Available—Steam Demand Declines—Car Supply Is Entirely Inadequate, Due to New Operations.

Since Eastern Kentucky operators agreed to a maximum price of \$6, it has been a hard matter to secure any quotations on coals from that district. Some of the jobbers claim that they cannot buy at \$6 and are paying more.

Car supply is about 33 per cent in Eastern Kentucky, and shows no signs of improvement. Much of the trouble is due to the fact that new companies have come in, and demand for cars has increased greatly as the fields developed, while railroad facilities have not kept pace.

Retailers have sent out letters to operators in the Jellico, Hazard, Elkhorn, Harlan and Straight Creek fields asking for quotations, but many of the companies are tied up and have very little free coal to offer.

There is some Southern demand in the cotton ginning and textile districts, some call for bunkering, and a little export business, with a continual demand north of the river. However, railroad fuel is weakening and the aggregate demand is not as keen as it was. Many buyers have been withdrawn from the fields.

Retail demand is fair, consumers waiting for better grades of coal, which are not in good supply. Quotations of Eastern Kentucky coal at retail show: Lump, \$11.50, mine run, \$10.50@ \$11, screenings, \$9.50@ \$10.

BIRMINGHAM

Inquiry for Steam Is Slightly Slackened—Domestic Sizes Continue Strong—Good Car Supply and Improved Labor Conditions Reflect Steady Gains—Export Calls Are Large.

Steam demand has slackened somewhat. Spot prices range \$5.50 for Big Seam to \$7.50@ \$8 for Black Creek and Cahaba mine run. Spot buying is still of more than sufficient volume to absorb all free coal thrown on the market.

There has been some increase in the production but not enough to affect market conditions as yet. Contract coal is moving in larger volume and with more ease than for some time past, though the railroads are still confiscating heavily. Inquiry is good for bunker and export coal and a considerable tonnage is reported as moving from Mobile and Pensacola, some of which supply comes from Alabama bought up from small operations. Kentucky, Tennessee and Indiana coal has been

offered in the local market, with some grades reported as low as \$6.25. A contract for 10,000 tons of domestic coal for export was proffered a local operator the past week, the price to be named by the shipper.

There is a great scarcity of domestic throughout Alabama. Dealers in many places say that receipts are not sufficient to enable them to fill current orders. State Fuel Administrator Davis is now making a survey of the stocks of domestic coal and the probable requirements for the rest of the season with a view to making proper distribution of the supply which will be turned over to the state.

Working forces are much larger than a week ago, and a number of old men are returning to work in the centers where the strike has been most keenly felt. Output for the week of Oct. 2, from mines reporting, totaled 258,905 tons, which is a satisfactory gain. Car supply is sufficient to meet the needs of the coal fields.

Inland West

DETROIT

Demand for Steam Is Easier—Cooler Weather Increases Domestic Calls—Prices Are Slightly Lower—Anthracite Shortage Grows.

Bituminous—Wholesalers report a slight increase in supply of steam coal within the last few days, due in part to a less active inquiry among consumers. This is attributed in some degree to the buyers' expectation that prices may be lowered after the close of Lake navigation.

A more active demand has appeared among retailers and domestic consumers with the approach of cold weather. Jobbers say the supply of domestic coal is not equal to the requirements. There appears some doubt among the dealers as to whether the recent order of the Interstate Commerce Commission giving priority to shipment of about 2,100 cars daily to Michigan, Ohio, and Indiana, will afford very much relief.

There is a feeling that benefit may result from the order in terminating abuses that have developed under the system of permitting railroads and public utilities to assign cars at the mines for loading. Considerable blame for inequitable distribution has been ascribed to this practice.

Hocking mine run is quoted \$8 at the mines, lump is held at \$8.50. West Virginia mine run ranges around \$8.50, lump \$8.75@ \$9. There is a small amount of smokeless lump available at about \$10.50.

Anthracite—Conditions are very unsatisfactory for dealers and consumers. The shipments are small and irregular. With no stock on hand the retailers are unable to make much headway in providing for the needs of their customers, whose inquiries are becoming

more urgent with the approach of winter weather.

Lake Trade—Despite all efforts, shipments to the Northwest are still considerably below the daily minimum of 4,000 cars. The season's movement to Oct. 10 was approximately 6,000,000 tons below that for the similar part of 1918.

COLUMBUS

Lowered Steam Demand Softens Prices—Domestic Market Is Strong—Production Increases—Lake Movement Is Improved.

Operators in the Hocking Valley field are experiencing a falling off in demand for steam grades. With large steam users shutting down either entirely or partially, the consumption of steam sizes is correspondingly decreased. There has been a decline of about 75c. for various Ohio grades. West Virginia coals are still holding up fairly well.

Retail trade is still strong and no appreciable weakness is reported in any section. Dealers are clamoring for coal. Stocks are light and are moved out as quickly as they arrive. The policy is to apportion the available amount to many customers. Retail prices are ranging firm at former figures. Hocking lump retails \$8.75 @ \$10.50, and possibly higher, while mine run can be purchased \$8.50 @ \$10. Pomeroy Bend lump is firm \$9.50@ \$11 and Pocahontas is selling \$12.50@ \$15. Kentucky lump retails \$11@ \$13.

Lake tonnage is quoted \$6.50@ \$7.25. The car service for Lake shipments has been unusually good and the same is true of the vessel movement.

Loadings at the H. V. docks at Toledo during the week ended Oct. 9 amounted to 186,649 tons as compared with 164,373 tons the previous week. The T. & O. C. dock dumpings were 62,280 tons as compared with 82,123 tons the previous week.

Production in various Ohio fields has shown an increase, because of an improvement in the car supply. This is especially noticeable on the H. V. Ry. side of the Hocking Valley field. The T. & O. C. R.R. had had a rather indifferent car supply, and this had the effect of holding production in the entire field to about 55 per cent. Pomeroy Bend and Cambridge districts report an output of 65 per cent.

The Southern Ohio Coal Exchange reports an output in that field for the week ended Oct. 2 at 298,000 tons out of a capacity of 606,000 tons. Of the loss 175,000 tons was due to car shortage; 86,000 to labor; 3,000 to strikes; 10,000 to mine disability and 34,000 to other causes.

Price at the mines for various grades used in Central Ohio are:

Hocking lump.....	\$7 75@ \$9.00
Hocking mine run.....	6 75@ 7.50
Hocking screenings.....	6 25@ 7.50
Pomeroy lump.....	7 75@ 9.00
Pomeroy mine run.....	7.00@ 7.75
Pomeroy screenings.....	6.50@ 7.50
West Virginia Splints, lump.....	7 75@ 9.00
West Virginia Splints, mine run.....	7.00@ 7.75
West Virginia Splints, screenings.....	6.50@ 7.25
Pocahontas lump.....	8.00@ 9.00

ST. LOUIS

Railroad Contracting Is Heavy—Prices Are Higher—Local Steam Market Is in Good Shape—Mining Conditions Are Better.

Steam sizes, especially screenings are easier in St. Louis. This has been offset some by heavy shipments of mine run to railroads and has made the lump and egg market stronger. The country is still in a critical condition for both steam and domestic, although the former demand has eased up considerably.

In the Standard field the car supply is about the same. Many mines are selling their outputs to railroads in order to get full working time with cars furnished. The only labor trouble at present is the indifference of the miners to work full time. Prices show screenings for St. Louis as low as \$4 and country shipments \$5@5.50. Domestic sizes in St. Louis are \$4.25@5, with outside up to \$7 and Illinois Central shipments South as high as \$8.

Mt. Olive field averages four days per week car supply on commercial and the railroad tonnage there is growing heavier. No labor troubles. Prices in St. Louis range \$4@4.50 and outside shipments \$5.50. Steam sizes are practically all contracted.

In the Carterville field fairly good car supply prevails on all roads excepting Missouri Pacific and Illinois Central, which are both in a bad way for equipment. These coals bring from \$5, a price maintained by the operators' organization, up to \$8 on the part of independents.

In St. Louis proper there is no anthracite moving in, but a few cars of smokeless are coming through, with nothing from the Arkansas fields available. The local coke production has increased some, but the demand for coke by gas companies throughout the Middle West has taken the bulk of this off of the domestic market.

Retail prices in St. Louis are:

Anthracite	\$18@18.50
West Virginia smokeless	\$16@16.50
Carterville	\$9.50
Mt. Olive	\$8@8.50
Standard	\$7.50@8

CHICAGO

Car Supply Is Greatly Improved—Steam and Retail Situation Is Better—Market Is Unsettled, Due to Price Investigations.

Mines supplying Chicago are enjoying a better car supply than at any time since the first of the year. Franklin County is receiving a 60 per cent supply, while mines in the Springfield district are perhaps even a little better off.

Both steam plants and the retail yards in the city are now beginning to report a little coal on hand, and the fear of an immediate coal famine has now been banished. With the exception of anthracite, Eastern coals like Pocahontas, Splint, etc., have been coming into the local market in much larger quantities, in fact, than at any time previous during the season.

Prices are so varied that it is impossible to give satisfactory quotations.

Domestic coals are bringing \$6.50@ \$7.75; steam \$5@6.50.

On account of the investigation of the Grand Jury, now sitting in Chicago, the market is very unsettled and varies considerably from day to day. With the exception of a few more or less obscure jobbers, no one connected with the coal industry in Chicago has run afoul of the Grand Jury.

MIDWEST REVIEW

Unsettled Market Follows Price Investigations—Price Regulations Curtail Indiana Receipts—Spot Prices Have Eased Considerably.

During the past few days market conditions have been very unsettled. Grand Jury investigations have been made in an endeavor to place responsibility for the abnormally high prices, and several indictments have been returned. It is worthy of note, however, that but few operators have overreached themselves. Those who have aroused ire appear to have been wholesalers and jobbers who have taken advantage of the situation.

A very interesting, but somewhat unfortunate condition has arisen in Indiana. In a great many cases, the prices set by the State Coal Commission are so low that it will drive a number of smaller and more inefficient mines out of business, unless a car supply of 100 per cent is forthcoming.

The first result of the establishment of the coal commission prices has been that practically all coal produced in Indiana has been shipped out of that state and out of the jurisdiction of the commission. If this continues to such an extent that Indiana localities suffer the commission has power to distribute coal in Indiana to suit itself, irrespective of the wishes of the producer. No operator is going to sell his coal, in times like these, for \$3.45 per ton, when he can ship it out of the state and realize a much better price. The attention of the industry is focused on Indiana, and some interesting developments are expected during the course of the next few weeks.

Taken all in all, the situation in Illinois is much more satisfactory. No definite prices have been set, but several recommendations were made which have been followed; it was recommended that no producer sell coal to a wholesaler or jobber, unless he receives a guarantee that the jobber will not pass the shipment on to another jobber. This development alone will prove of great assistance in bringing coal prices to a more reasonable level and prevent some of the unscrupulous wholesalers from "swapping" coal. Operators are doing all they can to bring prices down to reasonable levels and the market has lately shown some signs of this action.

Prices on steam coals are now at more normal figures. The best screenings to be had are bringing not more than \$5.50 per ton, while the poorer grades are selling at \$5@5.25. Mine run is being sold \$5.50@6.50, while prepared sizes are bringing \$6.50@7.

INDIANAPOLIS

Fixed Prices Send Free Tonnage Out of State—Contracts Being Made—Operators Will Fight Ruinous Order.

Claiming that ruinous effects will follow adherence to prices fixed by the state fuel and food commission, operators are preparing to carry a test case before the Supreme Court, if necessary. The immediate result of the order fixing prices has been that shipments of free tonnage outside the state have been greatly increased. Heavy movements to Wisconsin and Northern points are reported, also to Southern ports for bunkering and export, all at prices considerably better than the restricted figures allowed by Indiana's commission.

Another logical tendency on the part of operators to seek protection against this injustice is seen in the number of new contracts being made outside the state.

There are some mines in Indiana that can run on this price schedule, due to low production cost and good running time. Others also have prior contracts, made at figures above those listed by the commission which they are filling to advantage. However, with an average car supply of 75 per cent at best, it will be impossible from an economical standpoint for the majority of the mines to apply other than a minimum tonnage for Indiana delivery.

Western

DENVER

Car Shortage Cuts Bituminous Production—Demand Is Excellent—Lignite Prices Are Increased.

Bituminous—About one-fifth of the lost time for the week ended Oct. 2 was due to car shortage, as reported by the Colorado and New Mexico Coal Operators' Association.

Colder weather has stimulated sales, but operators are sacrificing some of their standing orders for out-of-state shipment to supply local dealers.

Labor conditions are generally good, although the demands of miners in lignite fields for 20 per cent advance for dead work, and a working agreement, have caused uneasiness among some of the bituminous producers.

Retail prices are continuing \$11.50@ \$12.50 for lump. There is no indication at this time that prices will be increased the first of the month.

Lignite—Most of the companies raised the mine price 20c., Oct. 11, and this jump was immediately reflected by retail price of \$10.05. The new mine selling price is \$6. No change in the price of slack was reported.

It is believed that impending labor disturbances, together with a general increase for labor granted recently and retroactive to Sept. 1, had something to do with the latest advance.

Distribution of cars was better than in the bituminous fields, little or no shortage being encountered.

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Consumers Predicting Break in Market—Operators Deny Existence of Such Prospect—Spot Market Strong as Ever—Good Export Expectations.

Spot prices are at least as strong as a week ago, if not a trifle stronger. The market is not as heavy, but this seems to express nothing but an expectation as to the future. There is a growing feeling on the part of buyers that conditions as to supplies and requirements do not warrant as high prices as have prevailed, and there is the expectation of a price break.

Operators insist that there is no ground for expecting lower prices in anything like the near future. They combat the view expressed by some consumers that the ending of the Lake season will throw enough coal on the market to break the price, and represent that there is an almost unlimited export demand, to absorb any coal released.

While movement to Tide has been restricted of late by railroad conditions, it being difficult to secure any permits over the Pennsylvania, for instance, it is suggested that the ending of Lake shipments will release equipment, enabling railroads to increase their movement to Tidewater.

Consumption of coal by the iron and steel industry has decreased somewhat, and further and greater decreases are promised, while the same is probably true of some other industries.

Quotations are on the same basis as a week ago, \$8.50@\$9 for steam and \$10.50@\$11 for gas and byproduct, per net ton at mine, Pittsburgh district.

CONNELLVILLE

Spot Market Is a Shade Stiffer—Coke Not Affected by Softness in Pig-Iron Market—No Contract Negotiations—Prices Are Unchanged.

The spot furnace coke market has stiffened a trifle since last report, since \$17 is the minimum done in the past few days, while foundry coke is plainly firmer. The car situation is not altogether as poor as it was but production has increased only slightly. While there does not seem to be any heavy demand for coke it appears that all offerings are promptly absorbed at prices demanded by operators.

It seems curious that the coke market has not responded to the much poorer outlook which the iron and steel industry now faces. The producers now admit that a period of much lighter operation confronts them, and that

there has been some curtailment already in steel manufacture if not in pig iron production. The latter market has grown very weak, and it is possible to buy pig iron at more than \$5 a ton below recent, well established figures. Furnacemen are a unit in declaring that they cannot think of buying first-half coke at anything like prices now asked, but operators simply continue quoting their high prices for spot shipment and refrain from making any effort to induce furnacemen to sign up for the new half year.

The spot market is quotable \$17@\$17.50 for furnace and \$18@\$18.50 for foundry, per net ton at ovens.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ending Oct. 9 at 212,160 tons, an increase of 21,980 tons.

UNIONTOWN

Prices Decline Sharply Following Permit Withdrawals—Slump Believed To Be Only Temporary—Car Supply Is Very Strong.

Fuel prices slumped this week, the break coming when withdrawal of permits by the Pennsylvania operated as a stop on pier shipments and confined Eastern tonnage to the lines. Good car supply maintained production at a high relative figure and for the time offered the market more than it would absorb at prevailing prices.

Coke prices were not so sharply affected. Comparison of quotations of Tuesday and Friday of this week shows a drop of \$2 in by-product coal, from \$10@\$10.50 to \$8@\$8.50. P. R.R. Pool 34 also tumbled sharply, from \$9.75 to \$8.25, with B. & O. Pool 34 off from \$10.75 to \$10.25. Pool 44 slumped from \$9 to \$8.25, while P. R.R. steam went from \$8.25 to \$7.75 and B. & O. steam from \$8.25 to \$7.50. Coke sold off 50c. under the influence of the movement, centering around \$17.

These price changes are not expected to be lasting. Some expect an upward trend with the re-opening of the Pennsylvania piers, provided other conditions remain constant. The British strike should have a strong bullish effect on the export situation.

Car supply continues very strong, averaging 100 per cent for coke and almost 90 per cent coal for the entire local region. Lake Erie placements on the Monongahela continue to furnish the bulk of the supply. Motive troubles are apparently being cured, as yard congestion has been largely relieved during the past two weeks. Less than 1,000 loads are reported daily at Youngwood and less than 60 at Rainey.

NORTHERN PAN HANDLE

Car Shortage Is Main Factor in Production—Lake Demand Is Heavy with Good Prices—Domestic Prices Conform to New Regulations.

With miners back at work in Northern Pan Handle and Eastern Ohio mines only the lack of cars retarded production during the weekly period ended Oct. 9. Mines were able to secure only about 75 per cent placement. In view of the large quota required for Lakes as well as public utilities, that supply was far from being sufficient.

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

BITUMINOUS COAL

	1920		1919 ^a	
	Week	Calendar Year to Date	Week	Calendar Year to Date
Sept. 25b.....	11,851,000	392,763,000	11,613,000	341,276,000
Daily average.....	1,975,000	1,723,000	1,936,000	1,497,000
Oct. 2b.....	11,369,000	404,131,000	11,518,000	352,794,000
Daily average.....	1,895,000	1,728,000	1,920,000	1,508,000
Oct. 9c.....	12,075,000	416,206,000	11,888,000	364,487,000
Daily average.....	2,012,000	1,735,000	1,981,000	1,520,000

ANTHRACITE

Week Ended	1920	1919 ^a
Sept. 25.....	1,655,000	1,760,000
Oct. 2.....	1,804,000	1,845,000
Oct. 9.....	1,847,000	2,123,000

BEEHIVE COKE

United States Total

Week Ended		1920		1919
Oct. 9	Oct. 2	to Date	to Date	to Date ^a
1920c	1920b	1919		
412,000	376,000	305,000	16,482,000	15,102,000

(^a) Less one day's production during New Year's week to equalize number of days covered for the two years. (^b) Revised from last report. (^c) Subject to revision. All figures in net tons.

Demand at the Lakes was such as to keep Lake prices up despite the fact that inland prices had receded to some extent. Lower prices were even more noticeable on sales for local domestic consumption but that was because of action taken by the Fair Practice Committee which is under obligation to see that local consumers secure a sufficient supply of fuel. Coal for such local consumption was far below the present market quotations.

Public utilities were getting on the priority list and were in that way securing quite a large tonnage, so that there was not much more commercial coal available for general distribution.

EASTERN OHIO

Radical Labor Prevents Full-Time Operation—Cars Are Adequate for Available Tonnage—Prices Are Firm, but Decline Is Seen.

Although mines have been working during the past week following the recent outlaw strike, most of them are experiencing difficulty in persuading the usual percentage of men to work.

Explanation is made that the rank and file were so disappointed at the loss of the recent strike that they are taking the attitude of hampering operators in every way possible, as a matter of revenge.

The feeling prevails that although officers of the union were able to end the strike the radical element is still powerful, and through control of its own clique and influence on the conservative and loyal men presents a serious problem for the consideration of the operators, if they are to maintain production at a profitable level.

Output for the week ended Oct. 9, was approximately 250,000 tons, of which about 30 per cent was railroad fuel. Car supply seems to be about equal to the ability of the mines to load—further reflecting the labor situation.

Prices are still firm. Lake coal is quoted at \$7 and such commercial tonnage as is available, after filling priorities, is \$7.75@8.50. There is, however, a feeling in certain quarters that prices will soften following the close of Lake navigation.

FAIRMONT

Production Improves with Better Car Supply—Increased Lake Quotas—Heavy Tonnage—Prices Are Firm, but Drop Is Expected.

Production was on a larger scale than had been the case for several weeks during the period ended Oct. 9 because of a larger distribution of equipment. The increase apparently was not limited to any one road, mines on nearly all the lines in the northern part of the state sharing in the increased supply of empties.

Placement on the Monongalia on Monday did not indicate an adequate run, yet improvement in the supply was seen after that date. The same was true of the Baltimore & Ohio. On the Western Maryland, the supply was such as to make large loadings possible both on its main line and in the Wyatt-

Bingamon territory. Loadings during the first half of the week were sufficiently large to make up for some of the loss sustained later because of a dwindling supply.

So large a tonnage had been apportioned to the Lakes, that the cars released from assignment were used in taking care of Lake shipments. Still another factor, however, in making it impossible to increase the general distribution of production was an apparent increase in priority requirements.

Prices remained firm, in general. However, the general opinion was expressed that in view of the efforts of the Fair Practice Committee and general market conditions, there would be further price recessions.

Middle Appalachian

NORTHEAST KENTUCKY

Steam Demand Declines, but Domestic Calls Increase—Prices Are Receding—Car Placements Improve—Contract Shipments Are Heavier.

Mines were able to operate slightly more than on a half time basis, during week ended Oct. 9, production reaching 124,000 tons or 52 per cent of potential capacity. There was a production loss of 48 per cent, of which 39 per cent was due to a shortage of cars. Nine per cent of the loss was due largely to labor. A good many miners owning small farms are just now engaged in putting away their fall crops.

There is a slight slump in the demand for steam coal in Northeast Kentucky, though on the other hand there is a strong call for domestic fuel. Prices are from one to two dollars under these prices prevailing a month ago.

Some relief has been secured by Eastern Kentucky operators from the onerous public utility priorities and this is making coal somewhat more available to be applied on contracts.

KANAWHA

Car Supply Is Greatly Decreased—Prices Slightly Lowered—Lake Quota Leaves Little Free Coal.

In sharp contrast with an improvement noticeable in the car supply of the Chesapeake & Ohio R.R. was the miserable quota for mines served by the Kanawha & Michigan R.R. During the period ended Oct. 9 the supply reached so low an ebb—around 30 per cent—that it became necessary for operators to make a personal appeal to officials of the New York Central, by whom relief was promised.

It is also expected that the new order relating to the assignment of cars may afford some relief. Owing to the meager car supply the large quota taken for the Lakes worked a great hardship on the mines which were being pressed for contract delivery.

While it is doubtful if prices were quite as high as they had been there was no marked recession and the general demand for coal—in excess of the

tonnage available—was not such as to cause any sharp break.

Lake shipments were unusually heavy, the quota allocated to Kanawha mines having been increased, approximately 33 per cent of the production moving to Lakes.

POCAHONTAS AND TUG RIVER

Car Supply Again Declines—Production Is Lowered in Both Fields—Lake Shipments Are Heavy—Good Tidewater Demand—Labor Is Indolent.

During the period ended Oct. 9 cars were more scarce than at any time since the first of September. Losses from a labor shortage were also quite heavy in the smokeless territory along the Norfolk & Western R.R.

Production was slightly on the downgrade in the Pocahontas region chiefly because of a growing car shortage. Prior to this time car shortage had been almost insignificant and while the losses sustained because of a scarcity of cars had not reached the proportion of the labor shortage losses, yet the total production loss was swelled considerably.

There was much talk in the Pocahontas region of attempting to enforce the vagrancy law, owing to the large number of men who will not work more than a fraction of the week. This is the result of wage increases which make it no longer necessary for the miner to work more than half-time to earn what he formerly did by working steadily.

Lake shipments were on a somewhat larger scale, owing to shift in Lake quotas from Tug River to the Pocahontas region. Tidewater movement was also large. There is a steady demand at the piers for Pocahontas coal.

The peak of production in the Pocahontas field between July 10 and Oct. 2 was reached during the week ending July 31, with an output of 353,000 tons. The total tonnage for the three-month period was 4,285,404 tons or slightly more than 83 per cent of potential capacity. Car shortage loss was only 3.5 per cent, while the labor shortage loss was 11 per cent.

Production was slightly in excess of the figure for the same period of 1919. Car shortage losses a year ago were running much heavier, amounting to 23 per cent. On the other hand, labor shortage losses were 10 per cent less.

Between the idleness of a good many miners who will only work a part of the week and a dwindling car supply, Tug River production was still under the figure established late in September. It was the absentees from the mines, however, who were causing the greater part of the loss.

While Tug River mines were not required to ship so large a percentage of mine rating to the Lakes, yet the fact that few operations were producing to capacity tended to increase the percentage of coal shipped. The demand at Tide continued heavy but it was impossible to ship much fuel there owing to the large tonnage required to meet Lake requirements.

LOGAN AND THACKER

Production Increases—Many Strikers Return—Western Demand Slumps, but Tide and Lakes Movements Are Heavy—Prices Holding Firm.

Loadings were unusually large in the Logan region during first part of the week ended Oct. 9, the output reaching 60,000 tons on the first day, when more than 1,200 cars were furnished. Sufficient impetus was given production during the early part of the week to make it larger than during the previous week, and a general estimate of production places the figure at 250,000 tons.

While Lake requirements had been increased that was not the only factor leading to large deliveries. Following a diminution of the Inland West demand, due to a slowing down of industrial activity, Lake buying was more active. There was a steady Tidewater movement at prices showing no decrease as compared with previous weeks.

In that portion of the Thacker field affected by the strike it is estimated that there was a production of 25,000 tons, verifying so far the prediction made early in the month that such mines would have a production for October of about 100,000 tons.

Strike losses in the Williamson field have been reduced from 90,000 tons a week to 65,000 tons. Many miners, who were on strike, have returned to work, moving back to company houses formerly occupied by them.

NEW RIVER AND THE GULF

C. & O. R.R. Car Placements Are Still Inadequate—Production Is Greatly Curtailed by Labors' Indifference—Heavy Tide Movement at Firm Prices.

The Virginian Ry. was able to keep production up to the level of the previous week with a 70 per cent supply, but on the Chesapeake & Ohio R.R. cars were more scarce, mines not running more than half time.

There was growing labor shortage. It is the experience of Winding Gulf operators that since the last wage increase the tonnage has decreased a third, due to the irregular working of the men. It is being urged upon Gulf operators that they secure men from Southern Italy now coming to this side in such large numbers.

While some of the Virginian Railway's new cars are in service the bulk of this equipment will be delivered in November. By the first of the year the Virginian should be in shape to furnish a car supply of about 100 per cent. General trade conditions are practically unchanged.

There was a slump in production in the New River field. From the very first of the week empties were fewer than usual. The supply was estimated at 50 per cent.

Little or no New River was shipped to Lakes and Western deliveries were not large. There was a favorable demand at Tidewater, and the bulk of the output was consequently shipped to seaboard, moving at prices considered

very satisfactory. Owing to the limited car supply, however, tonnage produced was hardly more than sufficient to take care of contract requirements.

VIRGINIA

Cars Are Plentiful, but Labor Losses Are Heavy—Price Is Steady—Good Demand from All Sources.

Labor shortage was the most potent factor in restricting production during the period ended Oct. 9 insofar as it was possible to determine. There was a production report of only about 130,000 tons, representing about 75 per cent of potential capacity.

Cars furnished were sufficient to load such coal as was produced, the labor shortage entailing a loss of about 22 per cent as against a car shortage loss of only one per cent. In fact, there was a full car supply on all five roads supplying the field except the Norfolk & Western R.R. The usual amount of about 30,000 tons was utilized in the manufacture of coke.

Prices are showing less fluctuation than has heretofore been the case, although there appears to be a steady demand both at Tidewater and Inland East markets, particularly in the South where the domestic demand is beginning to show signs of activity, as reflected in inquiries from dealers. More free coal is available since the Commerce Commission put out its new orders.

Southern Appalachian**SOUTHEASTERN KENTUCKY**

Improved Car Supply Increases Production—U. S. District Attorney Slatery Reads "Riot" Act to Operators.

Cancellation of Service Order 16 and the continued demands from operators of this field for a more equitable distribution of cars has materially increased the production of this field in the past 10 days. Many of the mines received a full three days' car supply last week, with good prospects for an equal supply this week.

All operators of this field were invited to meet with the U. S. District Attorney General in Cincinnati on the 4th, and some attempt was made to get the operators to agree to sell their coal for \$6. A form letter was sent out for the operators to sign, but many of them have not done so. Mr. Slatery stated that he certainly intended to indict every operator who sold coal for more than \$6. It is not known where Mr. Slatery gets his authority for fixing this price.

Many of the larger mines are screening their coal now and shipping in large quantities to the domestic trade of Kentucky and adjoining states, in an attempt to supply the great demand for domestic sizes. The market price just now is \$6, but it is not believed that this will be the price for any length of time.

Middle Western**WESTERN KENTUCKY**

Excellent Demand for All Grades—Car Supply Slumps—Better Freight Rates Open New Territories.

In spite of the fact that prices in Indiana and Eastern Kentucky are controlled by Federal authorities and are comparatively low, Western Kentucky operators are having no difficulty in getting excellent prices for all the coal they can produce.

Under the ruling of Federal Judge Evans, at Louisville, for the Western District of Kentucky, operators cannot be prosecuted under the Lever Act.

Operators report an average of 33½ per cent car supply on L. & N. and 40 per cent on the I. C. Ry. This is much lower than for the past few weeks.

Production is moving north of the Ohio, principally through Evansville, to Detroit and south to Memphis and Nashville, with some coal also coming to Louisville. A little coal is being sent to Gulf ports for bunkering or export.

Operators today face the best period of their history. Better freight rates granted enable them to reach many sections of the North and West from which they were formerly barred, also sections of the South and Gulf ports. Formerly Western Kentucky had a good sale for lump, but not much demand for steam, whereas all steam today is moving freely.

Mines are averaging \$5.50 for screenings, \$6.50 for mine run and \$7.50 for lump.

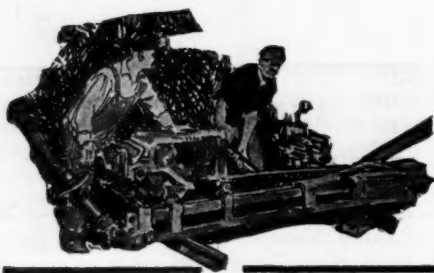
DU QUOIN

Cars Are Plentiful—Production Is Heavy—Same Dissatisfaction Among Leaders—Market Declines Slightly.

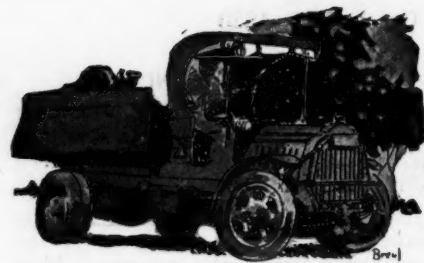
Steady work time has held out encouragingly at most of the mines during the past week, many of them have had instances when almost a half-day supply of cars were on hand, left over from the previous day. Many of the mines are still operating on priority orders from 40 to 70 per cent running time. The Illinois Central has shown a marked improvement in its ability to move cars.

There are some rumors of a strike among the loaders at the various mines; however, no open talk is heard. Many of the loaders and diggers hold that the shift men have now an advantage over them since the Aug. 16 raise. In some districts the machine runners have the same feeling. The shift men are making in some places as high as \$10 to \$40 more than the loaders in a two-week period.

Due to warm weather the market took a slight slump. The largest portion of the shipments seem to be moving North toward Chicago and other industrial centers, with some few orders going South and practically none toward St. Louis. Mine run prices did not vary, remaining at \$6@7.25; screenings, \$5.50@6.75.



Mine and Company News



COLORADO

Walsenburg—Articles of incorporation have been filed for the San Juan Coal Mining Co., with a capital stock of \$50,000, as coal operator and dealer in the wholesale and retail branches of the bituminous trade. The directors are Henry Carlson, George E. Pleasants, James E. Tressler, A. E. Neelley and A. M. Guerrero. Present operations will be confined to Huerfano County.

Steamboat Springs—Recently incorporated, the Oak Creek Coal Co., with a capital stock of \$36,000, is preparing to mine and market bituminous coal from Routt County. Incorporators are Joseph C. Maguire, B. A. Ford and L. E. Minard.

ILLINOIS

Springfield—The Lenton Coal and Coke Corporation has a force of men at work on the Lenton mine just north of Auburn, formerly the property of the Pittsburgh Coal Co. The mine will be placed in operation as soon as the construction work is completed. Clinton Richardson, formerly mine manager at the Virden mine of this company, will be in charge as superintendent.

INDIANA

Linton—The Olive Branch Coal Co., organized by Neil Murphy, Chas. Page, Arthur Spangle, Thos. Coakley, John Rogers and Jack Coakley, are sinking a shaft near here on the Page farm. They will mine fifth vein coal and will be located on the South Eastern R.R.

Indianapolis—A complaint on a contract sent to Shelby County on change of venue from the Marion superior court has been received, in which The Atlas Mining Co. and Alfred M. Ogle are suing the Indianapolis Light & Heat Co. The plaintiff, as owner of a coal mine in Greene County, entered into a contract with the defendant and asks that judgment be given making the defendant comply to the terms of the contract.

KENTUCKY

Louisville—That movement of coal from west Kentucky by water to the Gulf for export is promising is shown in recent announcement to the effect that the West Kentucky Coal Co., Sturgis, has ordered a 250-ft. tow-boat, the largest built in 20 years on the Ohio, to be used for heavy towing down the Mississippi. It is being built in Pittsburgh, will be 50 feet wide, equipped with six boilers and 9-ft. stroke wheel.

Henry Ford, operating mines in eastern Kentucky, by paying higher than

the union scale, has defeated the mine unions. That organization called a strike to force recognition of the union, but met with no response, as the men preferred the higher wages to staying with the union.

OHIO

Corning—The Roberts Coal & Supply Co., of Columbus, has sold a small mine at Corning, to the Tharp-Repack Coal Co., of which C. S. Tharp is president and general manager. The mine is located on the Toledo and Ohio Central and has a capacity of 150 tons daily.

The Sunday Creek Coal Co. is pushing the development of Mine 8 at Corning, which is expected to be in production by Jan. 1. The mine will have an initial capacity of 1,000 tons daily which will be increased to about 1,500 tons. There is a large acreage to be worked from the new entry. A modern tippie is being erected. The mine is located on the Toledo and Ohio Central R.R.

PENNSYLVANIA

Philadelphia—The Raven Run Colliery Co., of this city, has received a Pennsylvania charter, the capital stock being set at \$1,500,000. The Wentz Corporation is the principal stockholder, and is one of the incorporators, the others being Messrs. Daniel B. Wentz and William C. Kent, both of Wyncote, and William H. Harding, of Overbrook. H. B. Price, of Philadelphia, is treasurer.

Pittsburgh—The Gilmore Coal Mining Co. has been organized with a capital stock of \$100,000. S. A. Gilmore, C. Ebershuger and E. L. Morris are the incorporators.

TENNESSEE

Dunlap—The Palmetto Coal Co., composed of South Carolina capitalists, operating mines at Cartwright, is reported to have acquired 5,000 acres of coal lands in that section from the Tennessee Coal, Iron & R.R. Co. and is negotiating for the balance of the latter's holdings in Tennessee, valued at between one and two million dollars.

WASHINGTON

Seattle—A lease of 2,040 acres in the principal coal-bearing region of Alaska to the Alaska Coal & Coke Co. of Seattle has been approved by Secretary of the Interior Payne, according to a report from Washington, D. C. The big tract of land, which is the richest in the Alaskan field, is located in the center of the Bering coal field.

The Chu Chua mine, situated near Kamloops, has been placed on a ship-

ping basis, according to Glenville A. Collins, consulting engineer. This property covers about 5,000 acres, is situated in the new coal area and it is said is capable of producing a large amount of coal of an excellent value.

A new coal mine is being opened up at Coalspur, on the Mountain Park branch of the Grand Trunk Pacific Ry.

WEST VIRGINIA

Buckhannon—The Iris Coal Co., recently organized with a capital of \$50,000 is planning for the development of 300 acres of coal lands and the initial plant will have a capacity of about 400 tons a day. Frank E. Williams is president-manager.

Huntington—Dealing in coal lands will be the principal business of the Lick Fork Collieries Co. which has just been organized by Huntington people with a total capitalization of half a million dollars. Those identified with the new concern are also interested in the Lake & Export Corporation. Organizers of the Lick Fork Collieries Co. were: F. J. Payne, S. J. Hyman, A. B. Hyman, N. J. Pugh and John S. Marcum, all of Huntington.

Huntington is to be the headquarters of the Big Eagle Mining Co., a \$400,000 corporation which will operate in Logan County, Triadelphia district. Leading figures in the organization of the new company were: Paul Hiner, B. J. Hiner, Herbert Fitzpatrick, D. W. Brown and C. M. Pickerell.

The Ranger Coal Co. has been incorporated with an authorized capital stock of \$50,000 to develop 740 acres of coal land at Ranger in the Lincoln County field. Active as effecting a preliminary organization were: W. J. Harvie, Charles S. Porter, T. J. Bartrug, G. H. Richard and J. C. Miller, all of Huntington, W. Va.

The Mountain State Coal Corporation, recently organized, has begun development work on a tract of 2,750 acres. purchased in fee including all mineral rights, on the Dry Fork branch of the Norfolk & Western Ry. By spring the company hopes to be producing red ash and Pocahontas coals at the rate of 1,500 tons a day. General offices of the company are to be at Huntington, W. Va.

Beckley—An increase of production on the part of companies operating on the Virginian Ry. was observed during July, the total tonnage produced by all the mines reaching 737,116 tons. Companies contributing to that total and having an output of over 10,000 tons during the month, 26 in all, were as

follows: New River Collieries Co., Eccles, 26,869 tons; Slab Fork Coal Co., Slab Fork, 25,840 tons; Winding Gulf Colliery Co., Winding Gulf, 23,175 tons; Raleigh Coal & Coke Co., Raleigh, 20,148 tons; Long Branch Coal Co., Long Branch, 19,549 tons; E. E. White Coal Co., Glen White, 19,450 tons; Loup Creek Colliery Co., Beards Fork, 19,437 tons; Gulf Smokeless Coal Co., Tams, 18,539 tons; E. E. White Coal Co., Statesbury, 18,513 tons; Pocahontas Fuel Co., Itmann, 18,070 tons; Kanawha, Glen Jean & Eastern R.R., Pax, 18,060 tons; Wyoming Coal Co., Wyco, 17,182 tons; East Gulf Coal Co., Helen, 16,373 tons; McAlpin Coal Co., McAlpin, 16,327 tons; Mead-Tolliver Coal Co., Kilarney, 14,785 tons; Loup Creek Colliery Co., Page, 14,573 tons; Lillybrook Coal Co., Lillybrook No. 1, 14,108 tons; Cranberry Fuel Co., Cranberry, 13,277 tons; Gulf Coal Co., Hot Coal, 12,611 tons; Wood-Sullivan Coal Co., Vanwood, 12,493 tons; New River Collieries Co., Sun, 11,925 tons; Leekie Fire Creek Coal Co., Fireco, 11,660 tons; Ingram Branch Coal Co., Ingram Branch, 11,065 tons; Bailey Wood Coal Co., Woodbay, 10,676 tons; Sabine Collieries Corporation, Ostego, 10,038 tons; White Oak Fuel Co., Oakwood, 10,010 tons.

WYOMING

Torrington—Receipts from nearby mines are being rapidly disposed of in shipments out of the state, and coal

bins filled with wheat, grain shippers being unable to get sufficient cars. The bins of the Burlington yards are at present improvised grain containers.

Casper—Completion of the spur to the mines of the Indian Coal Co. at Arminto by the Burlington R.R. means greater coal supply for Casper and an increased output, before long, of the company's tonnage. Distribution here will be through H. O. Bubb of the Casper Ice and Fuel Co.

BRITISH COLUMBIA

Victoria—New workings are to be opened up on Vancouver Island by the Granby Mining & Smelting Co. This company's operations on the island have been somewhat interfered with by a recent rule of the Supreme Court which decided that rights in two leases of coal lands being exploited by the company really were owned by the E. & N. Railway Co. Pending an appeal, however, the Granby company is permitted to mine up to 100,000 tons of coal. While this latitude is permitted the operating company no doubt feels its restrictions, and proposes to proceed with the development of other of its coal lands over which there is no dispute.

An alarming coal shortage is reported in Australia and New Zealand, the condition being attributed to the "go slow" policy of the miners of those countries. It is suggested as a prob-

ability that the collieries of British Columbia will be called on to fill orders from the consumers of the Antipodes.

An amendment passed at the last session of the Provincial Legislature to the Semi-Monthly Payment of Wages Act, providing for 26 pay days per annum in connection with the coal mining industry and that these pay days shall fall on a Saturday, became effective on Oct. 1. The original wages act of British Columbia applied to lumbering, fishery and mining industries. It established the principle of a payment twice every month to the workers in connection with these industries. The amendment is effective only in respect to coal mines and while it has met with opposition in some quarters the sentiment in its favor among those benefited is so unanimous that it will be generally accepted as a satisfactory step toward the improvement of working conditions.

NOVA SCOTIA

Sydney—Directors of the Dominion Coal Co. have decided to spend \$6,000,000 on the plants and new equipment. About \$2,500,000 will be devoted to the purchase of modern machinery, \$600,000 to repairs of old machinery, and \$50,000 to the installation of electric lighting in the pits. A new mine is being opened up at O'Neils Point to tap the Phalen seam at a depth of 760 ft. When completed, it is expected to have an output of 2,500 tons daily.

Traffic News

Interstate Commerce Commission—The Old Ben Coal Corporation, of Chicago, Wallace and Grotevant, of Forrest, Ill.; L. M. Bayne Lumber Co., of Strawn, Ill.; Sibley Grain Co. and F. N. Smith of Pontiac, Ill., who buy and sell coal, in a complaint to the I. C. C. against the Director General of Railroads seek reparation of \$411 because of alleged excessive charges on coal. It is charged that a rate of \$2.83 per ton was assessed on bituminous coal shipped from West Frankfort and Christopher, Ill., via the Illinois Central to Decatur and thence via the Wabash to Pontiac, Strawn, Forrest and Sibley, whereas the rate should have been \$1.60.

In a complaint the Franklin County Mining Co., of Benton, Ill., against the C. B. and Q. and the Illinois Central railroads, alleges that the railroads in serving mines of competitors at Logan and Orient, Ill., and other mines by joint arrangements and refusing to serve the complainant gives their competitors an undue preference, which the Commission is asked to correct.

The La Salle County Carbon Coal Co., of Illinois, operating mines at La Salle and Peru, attacks switching charges of the Illinois Central in a complaint to the Commission.

The I. C. C. has scheduled the hearing of oral arguments before it in Washington in coal cases as follows:

Northern West Virginia Coal Operators Association vs. the Pennsylvania R.R. Nov. 20.

Dickinson Fuel Co. vs. the C. & O. R.R. Nov. 18.

Spring Valley Coal Co. vs. the A. T. and S. F. R.R. Nov. 16.

Little Fork Coal Co. vs. Eastern Kentucky Ry. Nov. 20.

The hearing in the case of the Lehigh Valley Coal Co. vs. the Director General, scheduled Oct. 21 at Washington has been postponed to Nov. 12.

The I. C. C. has suspended increased rates on coal from eastern Kentucky, Virginia and Tennessee, on the L. & N. railroad, to northern points, the general increase having been 40 per cent, but this

being cut down to 33½ per cent to C. F. A. territory, until heard on Nov. 1. It will aid eastern Kentucky operators in reaching northern and central districts in competitive business.

The I. C. C. has decided that proposed increases in rates on coal from points on the Norton and Northern Ry. to destinations in Carolina and Southeastern territories are not justified and the suspended schedules are ordered canceled.

An examiner of the I. C. C. recommends that the St. Louis & O'Fallon Ry. is not a party to joint rates on coal from Prairie and St. Ellen mines in Illinois to St. Louis and not entitled to a division thereof.

Hearings have been scheduled by the Commission in the following coal cases: **Citizens' Coal Mining Co. vs. Director-General**, at Chicago, Oct. 21.

Consolidated Coal Co. of St. Louis, vs. Director-General, at Chicago, Oct. 25.

Cameron Coal Co. vs. Marion & Eastern R.R., at Chicago, Nov. 2.

Chicago, Springfield Coal Co. vs. Director-General, at St. Louis, Oct. 26.

Co. vs. A. & S. R.R. at Chicago, Oct. 26.

Hillsboro Coal Co. vs. C. C. C. & St. L. R.R., at Chicago, Oct. 29.

Lehigh & Wilkes-Barre Coal Co. vs. Director-General, at New York, Nov. 2.

Lehigh Coal and Navigation Co. vs. Director-General, at Philadelphia, Oct. 21.

Consideration is now being given by the Interstate Commerce Commission to the consolidation of railroads into systems, under the Transportation Act, which authorizes as many as 35 systems. It is said the Commission is giving serious consideration to a plan to consolidate railroads according to the character of business they perform, as for example, the consolidation into one system of all roads whose principal business is that of transporting coal.

In the case of the Central Illinois Coal Traffic Bureau an examiner of the Commission recommends that the rates on coal from mines in the Springfield district of Illinois to points in Wisconsin, Iowa, Minnesota and the Dakotas be found unduly prejudicial to the extent that they are less than 30c. per ton lower than the rates on like grades of coal from mines in the Southern Illinois district to the same destinations. In the case of the 5th and 9th Districts Coal Bureau an examiner of

the Commission recommends that the Commission decide that the rates attacked be declared not to be unreasonable per se. The complainant attacked the rates on bituminous coal from mines in the Belleville and inner groups in Illinois to St. Louis and points West in Missouri and other states to points in Iowa, Minnesota, the Dakotas, and Wisconsin and to Chicago and points beyond. The examiner further recommends that the rates from mines in the inner group to St. Louis and points West to which traffic moves through St. Louis be found prejudicial to the extent that they are less than 22c. per ton lower than rates from mines in the Southern Illinois group to the same destinations. Recommendation is also made that the rates from the Belleville group to destinations in the Northwest and to Chicago be found not to be unduly prejudicial or otherwise unlawful; and that joint rates should be established on fine coal from mines in the Belleville group to all points to which such rates are maintained from the Southern Illinois group.

Difference of opinion having developed over the I. C. C. orders concerning assigned cars for railroad fuel, the Commission in a letter to Daniel Willard of the Railway Executives seeks to clarify the situation. It says that its rule under Special Order 18 forbidding roads to assign cars for company fuel and failing to count such cars against the distributive share of the mines unless the entire output of the mine is taken by the carrier for not less than 6 months was not intended to put contracts existing at the time the order was issued in any different class than contracts made between the date of Order 18 and Nov. 1. These contracts, the Commission says, are regarded as in compliance with the rule. The order was not intended to interfere with the practice of assigning cars to one mine on some days and to another mine on other days, providing the mines are both owned by the same producing company and the practice is carried out in good faith. The Commission suggests that contracts calling for coal in tons and not for any particular period be revised prior to Nov. 1 so as to cover the entire output of a mine for a definite period.

Canadian Freight.—In the increase in freight rates permitted the railways of Canada by the Board of Railway Commissioners, coal is one of the articles of uni-

versal consumption on which the full rate advance is not permitted. The Board of Trade of Nelson, B. C. has asked that coke be placed in the same class, arguing that coke is a much used domestic fuel and that in the British Columbia interior the coke product of the ovens of the Crow's Nest Pass Coal Co. is essential in the maintenance of the important smelting industry of the Consolidated Mining & Smelting Co. at Trail.

Association Activities

Wagon Mine Coal Operators' Association of Indiana

C. E. Gillespie, of Staunton, was elected president, and Thomas Gregory, of Terre Haute, secretary of the association which was organized at a meeting of 100 representative owners and operators in Terre Haute recently. The members will attempt to bring about uniform operation by uniting in an effort to obtain cars.

Discussion in the meeting brought out the fact that although the Interstate Commerce Commission had ruled that the wagon mines were entitled to receive open-top cars, some railroads have not made deliveries of such equipment.

Mines in the following counties were represented: Parke, Vermillion, Vigo, Clay, Knox, Sullivan, Greene, Owen.

Frank S. Rawley, who has been representing the wagon mine owners in the effort to obtain car supply, was instructed to take up with the Interstate Commerce Commission the failure of the Pennsylvania, Chicago & Eastern Illinois and Evansville & Indianapolis railroads to deliver open top cars to the wagon mines. It was announced in the meeting that all roads had admitted receiving orders not to discriminate against wagon mines in placing cars, but it was said that so far neither of the three roads had delivered open-top cars to wagon mines.

Judge Rawley represented the association in the hearing before the state fuel committee regarding fixing of coal prices.

Hazard Coal Operators' Exchange

E. L. Douglass, president of the exchange, presided at a meeting at the Gibson Hotel, Cincinnati, Ohio, early in the month. Representatives of several Southern associations and many Kentucky operators attended. Mr. Douglass had been acting on a committee of operators to handle the situation arising out of the prosecutions of coal men in the Federal Court for the Eastern District of Kentucky.

Fair prices agreed upon by the September Grand Jury were as follows: For District 2, mine run, \$4.50 a ton; slack \$4.40 a ton, prepared sized \$5 a ton; District 3, mine run, \$4.40; slack \$4.30; prepared sized \$4.90; District 4 mine run, \$4.50 a ton; slack \$4.40; prepared sized \$5.

Mr. Douglass recently had conferred with Attorney Slattery and the latter had agreed that a price of \$6 might be justified because of wage advances and decreasing car supply subsequent to the investigation of the last Grand Jury but he did not believe that any prices for any grade of coal higher than \$6 could be justified and stated this was a maximum and many operators might be subject to prosecution if they charged as much as \$6.

While no vote was taken most operators present expressed themselves as in favor of abiding by the \$6 price limit and it was generally predicted that little coal would be sold at any higher figure for the present.

It was decided that a committee should co-operate with Governor Morrow to protect domestic consumers in Kentucky. It recommended that operators should get in touch with established retail dealer trade and give preference to such requirements. If dealers are unable to thus obtain coal they are to apply to Governor Morrow who is to turn over their applications to the committee and this committee is expected to pro rate such orders among operators in each group. It is sought to avoid as much as possible anything resembling the methods of the United States Fuel Administration.

The following committee was appointed to supervise the distribution of coal to domestic consumers: R. A. Ford, Secretary, Hazard Coal Operators' Exchange, Lexington, Ky., chairman; E. R. Clayton, Secretary, Southern Appalachian Coal Operators' Association, Knoxville, Tenn., and F. E. Durham, Secretary, Northeastern Kentucky Coal Operators' Association, Ashland, Ky.

Michigan-Ohio-Indiana Coal Association

Secretary Nigh led the long fight on behalf of the retailers and domestic users of the three states which resulted in the late ruling of the Interstate Commerce Commission in an allotment of 1,800 cars daily for Michigan, Ohio and Indiana. His early effort to secure a modification of the Lake priority orders for the purpose of furnishing relief to the retailers was unsuccessful.

The order as promulgated is to the effect that starting Oct. 10, Indiana will receive 500 cars daily on lump coal, Ohio 800 cars, and Michigan 500. In order to bring about this result and still continue Lake and public utilities priorities arrangements have been made to bring 2110 additional open-top cars in the territory covered these to be secured from other lines of industry handled on permits by the termination of those permits.

It was also ruled that utilities be provided with slack and screenings only thus leaving more lump for domestic use and at the same time stimulating production of this grade. The apportionment of cars of coal from the various producing sections is to be as follows: Northern Ohio 301 cars, Southern Ohio 424, Fairmont 12, Pocahontas and Tug River 87, New River 81, Pittsburgh and Pan Handle district of West Virginia 131, Kanawha, Kenova and Thacker districts 275, northeastern Kentucky 121, southeastern Kentucky 173, Hazard 137, Tennessee 60 and Indiana 300 cars.

In his campaign Secretary Nigh showed the great need for this movement as statistics indicated that 24 per cent of the winter's fuel supply had been stored by Indiana consumers, 32 per cent in Michigan and 16 per cent in Ohio. These varying percentages taken in connection with the larger population of Ohio makes necessary the apportionment of a larger tonnage to that state.

Team Track Operators' Association of West Virginia

At a meeting of the Team Track Operators' Association of Northern West Virginia held at Shinnston, the new office of "executive" was created and John T. Michael, of Clarksburg, was elected to fill that office. The duties which will devolve upon Mr. Michael are largely supplementary to those usually performed by the president and secretary of the Association. The following members of the board of directors were present: John B. Wyatt, of Shinnston, president; G. C. Michael, of Dola; T. L. Cordray and M. D. Wilson, of Fairmont; H. S. Huber, of Weston; H. V. Stout, of Mt. Clare; Howard Martin of Monongah; J. G. Kidwell, of Clarksburg, and Charles Atha of Worthington.

It is the purpose of the association to overcome the fact that there is no equitable distribution of cars to team track mines and that team track operators had been confined to the use of box cars. The team track operators claim that they are entitled to more consideration than they are receiving in view of the large amount of coal produced at a critical time during the war and also because if it had not been for them, cement plants throughout the country would have found it necessary to close down.

Industrial News

Clarksdale, Ariz.—The use of pulverized coal in metallurgy is brought prominently to the front by the erection of a plant to crush and distribute in powdered form to the various furnaces 750 tons of coal daily, at the United Verde mine. The cost of the plant was \$725,000. It includes re-inforced concrete storage bins, capable of being flooded in the event of spontaneous combustion of the coal.

St. Louis, Mo.—Fred B. Williams, of St. Louis, an expert electrical and armature man, formerly with the Security Coal & Mining Co., and the Wm. Wurdack Electrical Supply Co., of St. Louis, has gone into business for himself, with headquarters in St. Louis, under the name of the F. B. Williams Electric and Armature Repair Co., in which his brother is also interested.

Cincinnati, Ohio—The American Engineering Co., Philadelphia, has opened a local office at 207 Neave Building with M. Masson in charge for the purpose of extending Taylor Stoker representation and service.

Pittsburgh, Pa.—Richard Koch, General Manager of the newly formed Concordia Electric Co. has opened offices at 389 Union Arcade Bldg. Other officers are, Emil Winter, Pres., W. F. McCook, Vice-Pres., J. M. Anderson, Treas., P. B. Mossman, Secy. The company will manufacture miners' safety electric lamps and similar appliances.

Trade Catalogs

Barometric Condensers. United States Cast Iron Pipe and Foundry Co., Burlington, N. J. Edition Aug. 1920. Pp. 28, 6 x 9 in.; illustrated. Description of condensers, auxiliaries and power piping. Advertiser.

Charging Equipment for Miners' Lamp Batteries. The Cutler-Hammer Manufacturing Co., Milwaukee, Wis. Publication 834. Pp. 8, 8½ x 11 in.; illustrated. Describes and illustrates the C-H Charging Rack. Advertiser.

Walworth Export Catalog No. 35. Walworth Manufacturing Co., Boston, Mass. Pp. 400, illustrated. Complete catalog covering valves, tools, pipe fittings, etc. Printed in English, Spanish, Portuguese and French.

The Kaustine System of Sanitation. Kaustine Co., Inc., Buffalo, N. Y. Catalog "H." Pp. 47, illustrated, 8 x 11 in. Describing the manufacture of sewage disposal, septic and other sanitation systems. Advertiser.

Electric Hoists. Link-Belt Co., Chicago, Ill. Catalog 380. Pp. 96, illustrated. Description of monorail electric hoists and traveling cranes. Advertiser.

Series C R 4031-3. Contractor Type Automatic Starters. General Electric Co., Schenectady, N. Y. Two bulletins, 8 x 10½ in.; illustrated. For Series-, Shunt-, or Compound-wound Direct-current Motors.—Advertiser.

Publications Received

Mineral Resources of the Philippine Islands for the Years 1917-18. Issued by the Division of Mines, Department of Agriculture and Natural Resources, Bureau of Science, Manila, P. I. Pp. 80, 7½ x 10½ in.; illustrated.

Bituminous Coal Storage Practice. University of Illinois, Engineering Experiment Station. Bulletin 116, by H. H. Stoeck, C. W. Hippard and W. D. Langtry. Pp. 157, 6 x 9 in.; illustrated.

Pulverized Fuel. The Commission of Conservation, Ottawa, Canada, has published a pamphlet from a report on "Pulverized Fuel, Its Uses and Possibilities." W. J. Dick, the author, is a recognized authority on Canada's fuel and power problems, and his research work has gone far toward indicating the methods by which these may be solved. Copies of the pamphlet are freely obtainable on request to the Commission.

Coming Meetings

Illinois Mining Inst. will hold its next meeting on Nov. 20 at Springfield, Ill. Secretary, Martin Bolt, Springfield, Ill.

Coal Mining Institute of America will hold its annual meeting Dec. 8, 9 and 10, 1920, in the Chamber of Commerce Auditorium, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

American Mining Congress will hold its annual meeting at Denver, Col., Nov. 15 to 19. Secretary, J. F. Callbreath, Munsey Building, Washington, D. C.

The Canadian Institute of Mining and Metallurgy will hold its second annual western meeting at Winnipeg on Oct. 25, 26 and 27. Headquarters will be at the Hotel Fort Garry. Local secretary, W. W. Berridge, 905 Union Trust Building, Winnipeg, Can.